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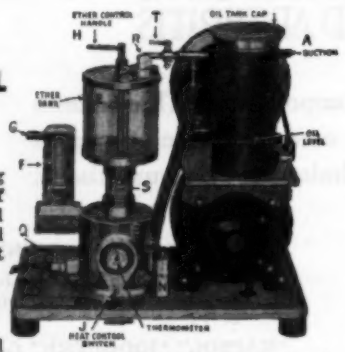

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VOL. II.—31ST YEAR. SYDNEY, SATURDAY, JULY 8, 1944. No. 2.

Table of Contents.

[The Whole of the Literary Matter in THE MEDICAL JOURNAL OF AUSTRALIA is Copyright.]

ORIGINAL ARTICLES— Page.
Dr. E. S. P. Bedford and His Hospital and Medical School of Saint Mary's, Van Diemen's Land, by W. E. L. H. Crowther 25
The Treatment of Ingrowing Toenails, by T. E. Wilson, M.D., M.S., B.Sc., F.R.A.C.S. 33
Gas Gangrene at an Australian General Hospital in the Owen Stanley and Buna-Gona Campaign, by K. C. Ross and W. P. Ryan 35

REPORTS OF CASES—
A Case of Acute Intestinal Obstruction, by R. P. Booth 37
Report of a Case of Hæmangioma Causing Hernia, by G. M. Hone and A. L. Newson 37

REVIEWS—
Medicine in Britain 38

NOTES ON BOOKS, CURRENT JOURNALS AND NEW APPLIANCES—
The Electrocardiogram 38

LEADING ARTICLES—
The Story of a Complete Medical Service 39

CURRENT COMMENT— Page.
Sweet Taste 40
Primary Atypical Pneumonia 41

ABSTRACTS FROM MEDICAL LITERATURE—
Therapeutics 42
Neurology and Psychiatry 43

BRITISH MEDICAL ASSOCIATION NEWS—
Scientific 44

CORRESPONDENCE—
Butter Rationing and the British Medical Association 47

OBITUARY—
Arthur Hopkins Clarke 47
Henry Arthur Powell 48
Anton Breinl 48
Francis Seavington Stuckey 48

NOMINATIONS AND ELECTIONS 48

DIARY FOR THE MONTH 48

MEDICAL APPOINTMENTS: IMPORTANT NOTICE .. 48

EDITORIAL NOTICES 48

DR. E. S. P. BEDFORD AND HIS HOSPITAL AND MEDICAL SCHOOL OF SAINT MARY'S, VAN DIEMEN'S LAND.[1]

By W. E. L. H. CROWTHER,
Hobart.

It is one of the values of lectures on the History of Medicine to keep alive the good influences of great men even after their positive teaching is antiquated.[2]

ON the wall of the north transept of Saint David's Cathedral there is a modest stone memorial to William Bedford, D.D. Originally at Old Saint David's, where he ministered for so many years, the memorial was removed to its present site when that church was demolished. On it is the following inscription:

Sacred to the memory
of
William Bedford, D.D.
Senior Chaplain to the Colony.
His virtues are enbalmed in the hearts of his family.
For the pardon of his sins he depended on Christ.
His children thus desire to perpetuate the remembrance
Of an old and faithful servant of the Church
And of a Parent to whom they are
most deeply indebted.

It was early in 1823 that this good old pastor, then a young and eager man, came to Van Diemen's Land as second incumbent of Saint David's Church. His predecessor, the Reverend Robert Knopwood, full of years, had carried the burden since that day in 1804 when he had landed at the Derwent with Lieutenant-Colonel David Collins. The new chaplain faced a very difficult task, as the moral state of the community was appalling. He felt that unless those in authority set a proper example, there could be no improvement. On every hand officials were known to be living shamelessly in sin, and, to quote Beattie,[a] "against these he thundered with a Knox-like zeal in the church, which they were forced in etiquette to attend". He prepared, too, a list of such offenders and gave it to the lieutenant-governer, Colonel Sorell, only to be met with a good-humoured snub. The arrival of Colonel Arthur, with his uncompromising and austere conception of what should be correct behaviour at the settlement, soon enabled Bedford to bring about a lasting change for the better in official circles and so throughout the colony.

J. W. Beattie goes on to tell of Bedford's labours among the convicts, who spoke of him among themselves as "Holy Willie". The female convicts greatly resented a regulation framed by a committee of which he was a member, by which for certain offences their hair might be cut off, and on one occasion they mobbed him and exposed him to grave indignity at the female house of correction. His saddest and most exacting duties were the long vigils he kept on more than three hundred occasions with condemned men at the old gaol before walking with them next morning to the scaffold.

Much more might be written of this splendid clergyman, who is described in a novel by Dumas, founded on the journal of a young French woman who visited Van Diemen's Land towards the end of his long incumbency, when he would be about sixty years of age. He was fond of good living, and an anecdote which is worth recalling tells of the valiant efforts of himself and his butler, Tom, to obtain a coveted receipt for a calf's foot jelly from a condemned prisoner. Their united efforts were in vain, and on his return from the gaol, when all was over: "Ah, Tom", said the doctor, vigorously shaking his head, "he died in final impenitence."

[1] Read at a meeting of the Royal Australasian College of Physicians at Hobart on March 11, 1944.
[2] Sir William Osler: "The Evolution of Modern Medicine."

Married to Martha Picard, he had three children, William, who had pastoral properties in Tasmania, Eleanor, the second wife of Sir Alfred Stephen, and Edward Samuel Picard. It is of the life and career of the last-mentioned that I propose to speak tonight.

FIGURE I.
The Honourable E. S. P. Bedford, M.L.C., F.R.C.S.

EDWARD BEDFORD'S MEDICAL EDUCATION.

There is no information to be had as to Edward Bedford's boyhood. The years in Hobart Town must have been spent at the rectory next door to the church,[1] and it is probable that he received much of his education from his father. Such splendid schools as those of Mr. Claiborne at Longford and Mrs. Carr Clark at Ellenthorpe Hall, Ross, were not then established. In any case, his primary education must have finished within a very few years, as his appointment as assistant colonial surgeon occurred in 1828. His medical education was made possible by the existing system of apprenticeship, by which a period of work under the instruction of a medical practitioner entitled the pupil to a licence to practise. Bedford was indeed fortunate, as his father's official position made it inevitable that his instructor should be James Scott, M.D., senior colonial surgeon, and Scott was all-powerful in medical circles in Van Diemen's Land. His marriage to Lucy Davey, daughter of a former lieutenant-governor, Colonel Davey ("Mad Tom"), added wealth and social prestige to other attributes, and from his splendid home, "Bona Vista", he conducted a practice that is reputed to have amounted to £3,000 a year, an immense sum for those times. Scott alone had the privilege of admitting to, or of denying to any student or surgeon, the clinical facilities of the old colonial hospital, so young Bedford was in an enviable position. It will be seen that he proved himself more than worthy of the opportunity that was granted him. The association thus commenced remained unbroken until the death of Scott, in 1837, when Bedford acted as an executor to his estate.

Among my treasured possessions is an old cedar bookcase (it would have been termed a press by Samuel Pepys) which has a wash-basin sunk into a drawer. This came from the old Bedford home, and from its type and age I am convinced that it must have passed from Scott to Bedford before coming to me.

To return to Bedford: in 1828 his apprenticeship came to an end, and with his appointment to the Colonial Medical Service, he entered upon thirty-five years of devoted service to our small community.

BEDFORD'S WORK.

I imagine that the close association with Scott was more than sustained, and it is fair to assume that Bedford acted as assistant to him in his official and private work. With the assistant colonial surgeon, McBraire, he served as a member of a board of which Scott was president, appointed by Colonel Arthur to "assemble and report upon the causes of the extensive scurvy which prevailed on board the transport *George III*". This outbreak preceded the loss of that ship off the Acteon Reef in the autumn of 1835.

Here I may remind you of what took place on that occasion. The *George III* was a fine ship, only recently altered and repaired for use as a convict transport. There were on board 220 male convicts, and in the calamity 127 of these, with two seamen, one woman and three children, were lost. She had two surgeons, and all had gone well until after they had left the Cape, when cold weather set in and scurvy promptly followed. Dr. Wyse, a humane and able man, did all within his power; but owing to the damp and the restricted diet a large number of prisoners became ill, and 26 died. On the evening of April 12, while the vessel was making her way up D'Entrecasteaux Channel, she struck the rock, then unknown, and which now bears her name. The hull was stove and the masts soon went by the board. As the capacity of the boats was limited, it was decided by the military and ship's officers that the prisoners between decks should not be allowed to come up until the boats were filled and got away. When at last the bars were removed and those below were allowed on deck, it was too late, and over 120 of them had lost their lives.

It is easy to imagine how stirred Hobart Town was when this news was brought up by a boatload of survivors. The lieutenant-governor ordered a formal inquiry as to the circumstances surrounding the stranding of the ship and subsequent happenings, as well as appointing a board to report on the outbreak of scurvy that had preceded them. The board appeared to have had an easy task, as they were in possession of an able and comprehensive report from Dr. Wyse; they also had his evidence as a witness with that of Dr. Thompson, surgeon to the transport *New Grove*. Their finding, which is largely a summary of the report just mentioned, is worthy of examination. In their own phrasing, the outbreak chiefly depended upon the following causes: (i) the leakiness of the vessel (and in this regard it should be remembered how much importance such navigators as Cook and Bligh attached to dryness between decks); (ii) the deficiency of warm clothing; (iii) an utter loathing of the cocoa on the part of more than half the convicts; (iv) the reduced allowance of sugar, lime juice and medical comforts; and (v) the bad quality of the last-mentioned articles.

At the time of which I write, the term "wet ship" implied that prisoners landed from it would be, in a general way, unhealthy. The cold seems to have been also a potent factor. Dr. Wyse had written: "We had scarcely experienced cold weather when an instantaneous change became too manifest; the features became collapsed." The board shared fully in the opinion of Wyse that had fifty flannel shirts and drawers been available to him much misery would have been obviated.

The question of the cocoa is of great importance. Two facts stand out: 115 convicts were unable to drink it owing to an "utter loathing", and from this group came all the cases of scurvy. Conversely, no case occurred among those who took the drink. In view of our knowledge of scurvy as a deficiency disease, we need go no more deeply into the findings of the board; but its report is well worthy of close examination.

Scott's long rule as senior colonial surgeon closed with his death towards the end of 1837, and Dr. John Arthur was appointed as deputy inspector-general and permanent medical officer of hospitals. This change meant much to Bedford; in place of his friend and patron he had a superior with whom he was soon so much at variance as to be charged by him with "insubordination, deception and interference in hospital matters". It must have been a great source of comfort and strength to know that so valued a member of the colonial medical service as Dr. Robert Officer was also charged with a like offence by the senior medical officer. Bedford's position in the department does not seem to have been shaken, however, as in 1838 his duties included, as well as attendance at the orphan school, the care of the colonial hospital, the penitentiary and Sandy Bay road party. He had also to see any employee of the Government, the convict marine department and all the constabulary in and around Hobart Town (*The Colonial Times*, May 28, 1839). Altogether his affairs had prospered, and it seems he must have been allowed private practice, as within five years of his marriage with Miss Selby at Saint David's Church (January 4, 1836) he had relinquished part of his government appointments and was in control of the new Saint Mary's Hospital, and three years later he was settled in that delightful mansion, "Hawthornden", which still remains unspoiled beneath its oaks in Davy Street. Here, amidst its spacious gardens and walks, his large family of three daughters and six sons was brought up. He was a resident member of the Tasmanian Society, founded by Sir John Franklin and meeting monthly at Government House. In the first volume of its transactions is a contribution from him, "Observations upon the Conditions of Young Marsupial Animals". I venture to say that no scientific society so far from "Home" had such a brilliant commencement as this. At its meetings were present such men as Sir John Franklin himself, Hooker, the great botanist, John Gould, first of ornithologists, Ross, Crozier and MacCormack of the Antarctic ships *Erebus* and *Terror*, Jukes, the geologist, Count Strzelecki and so on, while from England, the Australian colonies and New Zealand came contributions from scientists, explorers and missionaries. Bedford was to write later for our Royal Society and that of New South Wales, and I shall note the titles of his writings in a short appendix.

Bedford was physician to the Franklins during part at least of their Tasmanian career, and from a passage in Sir John Franklin's description of his controversy with Montague, his colonial secretary, he appears to have been a friend and advisor as well.

Two appointments that Bedford held are of interest, the one in 1852 as health officer to the town, and the second in 1856 as commissioner in lunacy. He shares in a lesser degree with Dr. E. Swarbreck Hall honours as an epidemiologist, and fortunately we still have a detailed account by him of the serious outbreak of scarlet fever here in the years 1852 and 1853.[2] Allow me to attempt a summary of his conclusions. In Bedford's words, "the poison of scarlet fever was brought to this colony from Sydney in 1842, and since that period this disease has more or less prevailed". The two epidemics which caused so many deaths took place in 1852 and 1853. He regarded the severity of the outbreaks as being due to impaired general health in the community, following a period of unusual sickness, when many had been suffering from influenza, and the dogs were dying by dozens in the streets from distemper. Bedford differentiated his cases into two principal groups: (i) the acute type, with throat symptoms, in which at times death occurred in two or three days; (ii) a larger group, in which those who died, did so in about three weeks, from kidney disease. I quote from his description:

> While the early stages of the disease carried off many victims, it was very fatal also after the twenty-first day, when death almost always supervened from diseased action of the Kidney, producing non-secretive morbid effects. . . . It is seen that Albumin exists in all cases of Anasarca, and in many of the cases of Scarlet Fever, and that after Scarlet Fever and Anasarca it was no longer found there. . . . It cannot be too strongly borne in mind by practitioners that early and constant attention is necessary to the functions of the Kidney during all stages of Scarlet Fever.

After detailing the mortality of the various epidemics—1842, 23; 1843, 41; 1852, 29; 1853, 230—he goes on:

> It is very difficult to arrive at one fact, that is, the number of deaths according to the cases treated: by referring to my memorandum I find 96 cases attended this year exclusive of puerperal cases; out of these six died, or one case in every 16 treated; but if the three puerperal cases are added, it will make the mortality one in ten and two thirds.

Clinical features noted from his own series of patients were the following: (i) that there was a large incidence of dropsy in the fatal cases, especially at the orphan school; (ii) that belladonna, which he tried extensively, whilst protecting many, does no harm and is not curative; (iii) that blood-letting when used was valuable in certain instances of apoplectic or comatose affections associated with kidney complications. In fact, with its full detail and carefully prepared tables, the report is a valuable study of the incidence of this disease in a small community with relatively little acquired immunity to safeguard it.

About this period Bedford first came into conflict with perhaps the most remarkable of our early physicians, Edward Swarbreck Hall, M.R.C.S. The latter had come to Van Diemen's Land in 1833, and for a number of years served as an assistant colonial surgeon in country districts before moving to Hobart Town in the early fifties. Here, by his sustained interest and writings on climatology and disease, he built up his reputation, until in the words of J. H. L. Cumpston he became "Australia's first sanitarian".[3] The opening rounds were probably fought as a result of the high death rate during this epidemic at the orphan school, then under Bedford's control. At any rate, the temperate but devastating report by Dr. Hall,[4] in which he shows the mortality rate at that institution to be six times greater than among children of the same age elsewhere in the same district, must have been most difficult to answer. Even more damning was Hall's exposure of the same institution in 1859,[5] when he proved that the unfortunate children were existing in actual semi-starvation. In spite of what *The Hobart Mercury* calls an outrageous attack on Dr. Hall by Bedford in the Legislative Council, the lieutenant-governor sent peremptory orders to the officials of the institution, and as a result the amount of food given the children was doubled in the case of meat and vegetables and quadrupled for milk. One remembers here how much Sir William and Lady Denison, his predecessors, had done to see that these children were well cared for and happy. I shall not go further into these disputes tonight; they should be considered in full in any account of the work of Dr. Hall. It is sufficient to indicate how much worry they must have caused Bedford and to what degree they must have undermined his position.

In 1854 Bedford was admitted to the Fellowship of the Royal College of Surgeons of England or of Edinburgh. Dr. R. Scot Skirving tells me that he is shown on the medical register for New South Wales as "F.R.C.S. Eng. 1854". On the other hand, his granddaughter, Miss R. Bedford, believes that it should be Edinburgh. In either case, he does not seem to have had the fellowship conferred in an honorary capacity, nor is there any record of his having returned to England to submit to any examination. Be that as it may, to have achieved it is an indication of his increased interest in surgery, and this leads me on to some description of Saint Mary's Hospital.

Saint Mary's Hospital and Medical School.

The termination of Bedford's official appointment, which had carried with it attendance at the colonial hospital, must have left him with few clinical facilities. In the manner of his type, he met the challenge by the use of his influence and personal contacts, and as a result Saint Mary's Hospital was opened on January 1, 1841. In Campbell Street, on the same side and close to the old Theatre Royal, there still remains an old painted stone building with a relatively modern veranda (Figure II). It

has the name of Saint Regulus and is now in use as a boarding house. Here for some six years was the first home of the hospital. It was built by Bedford's own efforts and was probably the first institution of its kind in the Australian colonies. It was opened, to quote from a prospectus, "as a self-supporting hospital, for the benefit of the labouring classes of society, to afford at a small cost, medical attendance to the poor, to enable the rich to assist the destitute sick, and at the same time to encourage the efforts of the working classes in procuring aid at their own expense". It continues: "In the new building there will be separate rooms as a Sanatorium, for the accommodation of persons in the middling classes of Society." The income of the new hospital was to be from two principal sources, subscribers and members. The former, by payment of £3 *per annum*, had one ticket to admit one in-patient. Donors of £36 were to have special privileges, while for one guinea the captain of a visiting ship could ensure treatment for his crew during the ship's stay in port. Members paid a yearly fee ranging from 9s. for a man of twenty years to £11 12s. for one who had reached the respectable age of seventy and over. Thus for 9s. *per annum* the man who joined young would be certain, while he kept to his payments, of professional advice, medicine, lodging and attendance for the remainder of his life. Attention was called also to the possible prevention of serious disease by such facilities for treatment.

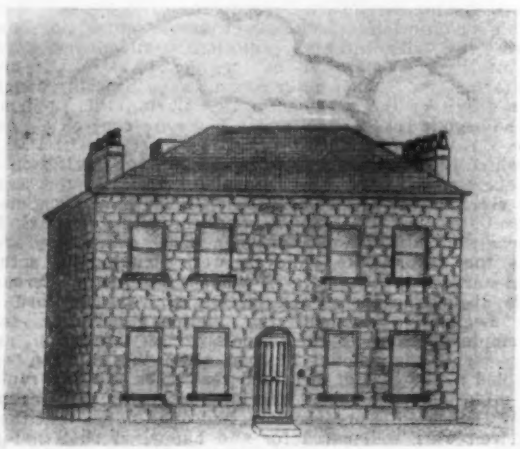

FIGURE II.
Saint Mary's Hospital, Campbell Street, 1841 to 1849 (approximately).

Patients who were not members might be received into the hospital by a payment of two shillings *per diem*, or if within the sanatorium (intermediate cases, as it were) by payment at the higher rate of three shillings *per diem*. Sir William Denison was patron, the management was vested in influential trustees and a committee of management, and as executives Bedford was medical officer, Mr. Turnley was apothecary and Mr. Burrowes was resident pupil. The prospectus, which bears no date, gives the information that married people could attend with their children at the dispensary or be visited at their own houses if necessary, by the payment of two shillings and sixpence a month. Lastly it is stated that "donations to the building fund will be thankfully received by the Committee of Management". While stating on the opening day that the hospital was ready to receive in-patients to the number of 54, the prospectus did not state whether that number could be accommodated at the one time. During the year 98 out-patients were shown as having been attended without charge.

Within six months of taking over the hospital, Bedford was involved with the assistant colonial surgeon, H. G. Brock, on a matter of professional etiquette. As an interesting commentary on medical manners of the period, allow me to quote from a summary of the dispute compiled by Miss Wayne:

> This complaint entered by Dr. Brock, on a point of medical etiquette, was published by him in a desire to justify his claim to an apology from Dr. Bedford and fills several columns of the *Courier* between its issues of 2-16 of February, 1841. It concerns a seaman from the ship *Navarino* suffering from injury to a knee joint and which Dr. Brock as assistant colonial surgeon attached to the colonial hospital proposed to benefit by operation from the thigh. The brother of the patient, a resident of Hobart Town, called on Dr. Bedford at Saint Mary's and asked him to take over the case. The latter explained that he was not in touch with the hospital, and could not take any action; however, while passing the building a little later, he went in and was taken to the patient. While in conversation with him (why do these things fall out like this?) Dr. Brock came to the bedside, prepared to operate then and there; it having been deemed unwise to remove the patient to the operating room as dangerous in his condition. The patient refused to consent to an amputation and was upheld by his brother, just then brought to the ward. The patient declared he would rather die than allow anyone but Dr. Bedford to operate, as he had no knowledge of Dr. Brock's ability as a surgeon. The doctors left the ward after shaking hands and expressing themselves as quite satisfied that no rule of etiquette would be infringed by the patient's transfer to Saint Mary's and reverting to the hands of Dr. Bedford. Dr. Brock added that it was natural the man should be treated by one whom he knew, rather than by one of whom he had no practical knowledge. The patient was transferred to Saint Mary's and operated upon by Dr. Bedford. No word is given of further treatment or results; however, it would appear that rumours were abroad suggesting Dr. Brock's incompetency, hence the publication. Dr. Bedford's lawyer considered no apology was necessary by his client since the matter had been settled by the handshake which presupposed an amicable settlement between the two surgeons.

Dr. Erasmus Wren and Dr. J. Pearson Rowe are mentioned as visiting the hospital about this time. The latter subsequently crossed to Port Phillip, to become a successful pastoralist. From time to time in the local newspapers are scanty references to the new institution. For example, in 1844 one eulogizes its work, while another next year points out that it is chiefly carried on for the benefit of the working classes. Yet again, sad to relate, the *Courier* in 1846 actually deprecates sermons being preached in aid of hospital funds. This miserable reference can have been aimed only at Saint Mary's.

In a report on the hospital, dated 1846, which I have not seen, Bedford forecast that a new and greatly improved Saint Mary's was to be built in the near future. He went on to mention the trust upon which the land granted to the hospital was to be given and the plans submitted for the intended buildings, and in doing so expressed the hope that it would become a permanent institution. Events must have moved rapidly, for from an old diary I have been given this extract:

> 23rd June, 1847. The first stone of St. Mary's laid. Dr. Edward Bedford called and asked me to go. About 2 p.m. a regular procession issued from Rev. Bedford's house. He and the Archdeacon in friendly juxta position, Gell in full Canonicals. A number of the oi polloi followed higgledy piggledy.

The diary does not mention the band of the 96th Regiment, or that the stone was laid by Lieutenant-Colonel Hulme, acting lieutenant-governor, in the unavoidable absence of Sir William Denison, who had been suddenly taken ill. The old hospital was closed by 1849. When the new hospital actually took in patients for the first time I do not know; but in January, 1854, Bedford was able proudly to report that the land mentioned above had been given to the trustees, the hospital had been erected and occupied for upwards of four years and the building paid for. It was a fine structure of two stories, and its cost amounted to rather more than £3,000, one-third of which was paid by the public and the remainder by a vote of £2,000 from His Majesty's Government to endow three beds. Its heating apparatus was especially notable, and at the sanatorium of the institution it was advertised that hot baths might be obtained daily between 3 and 6 p.m., the fees for which

were 2s. 6d. for a single ticket or £1 1s. for twelve baths. The new site was at the corner of Davy Street and Salamanca Place, and the buildings are still in use as part of the Lands Department (Figures III and IV).

FIGURE III.
Saint Mary's Hospital, now the Lands Department, 1849 to 1860.

In this same report Bedford gave interesting figures relating to the work of the hospital before and after its move. Patients actually admitted in the first five years were 782, for the succeeding eight years 1,903. The annual average for the previous years was nearly 300. He added the interesting fact that owing to altered conditions of the labouring classes, the payments for in-patients had for the most part been made by the people themselves, rather than, as hitherto, by their employers. He also stated that the expenses had not been greater than those of English hospitals, and had been less than those of Saint John's Hospital at Launceston, which Dr. Pugh conducted under the same rules as those of Saint Mary's. And consider the expenses: the allowances for the house surgeon varied between £21 18s. 6d. in 1850 and £92 0s. 3d. in 1854. For the period 1841 to 1855, the combined wages of steward, matron and servants rose from £56 19s. to £218 12s. 4d. The bill for bread in fifteen years went from £13 5s. 11d. to £218 3s. 5d. But there was a reverse side; costs for patients had risen, too, and although receipts were greater than those of Saint John's Hospital and Cornwall Hospital in Launceston, expenses per head were now 4s. *per diem* and 5s. for those in the sanatorium. Bedford mentioned how hard the struggle had been and the fact that similar institutions in England were helped by endowments.

In writing of these matters I have omitted to tell of the important part played by Bedford in the introduction of anæsthesia. Whilst Pugh at Saint John's must be given priority for Australia with the use of ether, Bedford was little behind him. Both were fortunate that Bishop Nixon had sent them from England, not only an apparatus for its use, but also in each case "with thoughtful care a supply of ether was sent with the inhaler" (*Hobart Town Courier*, September 8, 1847). Here, too, I may be allowed to mention that, talking one day to an old patient who is still alive, he informed me that he remembered as a very small boy being taken to "the old hospital in Davy Street" where my grandfather "lanced a boil or abscess for him". Another of his memories is the children's picnic in the grounds of Government House, on the occasion of the visit of the Duke of Edinburgh, when an ox was roasted whole for their sustenance. Both these happenings were well over eighty years ago, and it is interesting that at least one of those treated at Saint Mary's Hospital is still after so many years hale and well. Let us return to the report, the greater part of which deals with Bedford's dearest project, the medical school.

Medical Education at Saint Mary's.

Bedford appears not only to have had a great capacity for organization, but also to have been as it were a natural teacher. We have seen how his own apprenticeship had been spent, and very soon after his return from England in 1833 he turned his attention to medical education. His first pupil, Dr. E. C. Hobson, was trained at the colonial hospital before going on to the University of London, where he obtained the gold medal for comparative anatomy. He returned to Hobart Town and did much for the Tasmanian Society, before meeting an untimely death from pulmonary tuberculosis at Australia Felix on March 4, 1848. Bedford by 1859 was able to state[9] that since 1833 eight of his pupils had obtained diplomas in England; they were: the late Dr. E. C. Hobson, gold medallist, London; Dr. John Peet, Principal of Grant's Medical College, Bombay; the late Mr. T. D. Scott, assistant surgeon, Royal Navy; Mr. MacDougall, in practice in England; Mr. G. Garrard, in practice in England, first prize for anatomy at King's College, London; Mr. Walter Scott, in England; Mr. Hadden, physician to the Benevolent Society, Melbourne; Mr. Turnley, colonial hospital, Hobart Town. It is possible that at this time he had other pupils apprenticed to him.

His plan for Saint Mary's was ambitious and far-reaching—it was no less than to open a preparatory school of medicine for the Australian colonies. To put this into effect, he had sent a memorandum to influential circles in the capitals of the mainland. Replies had come from His Excellency the Governor-General (New South Wales), Sir Alfred Stephen, Chief Justice of New South Wales, and Sir Charles Nicholson, Governor of Victoria, as

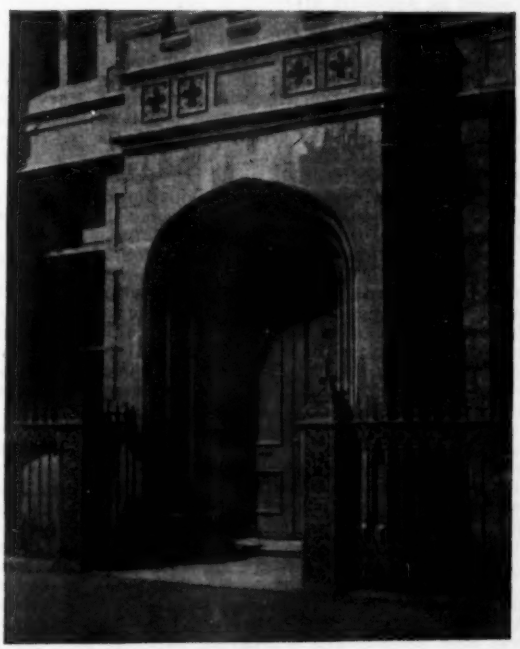

FIGURE IV.
Entrance porch of Saint Mary's Hospital.

well as others, with opinions enclosed, from medical practitioners. These replies, alas, were not encouraging; whilst approval of his plan was expressed, it was pointed out that the inducements to study medicine were small when compared with other pursuits in life, and that few parents desired a high education for their children, but rather an early entrance on the race of life. The most important conclusion put forward was that if pupils offered in Melbourne or Sydney, they would more likely remain there than go to Tasmania. Bedford went on:

> It remains to be seen if in any way this desirable object can be carried out; if twelve students offer in the colony the plan is simple, but under that number, some modification must be made, or the proposed system of instruction cannot be formed.

Affairs on the mainland were rapidly moving toward the formation of universities at Sydney and Melbourne, with their own medical schools, and possibly anticipating some such developments Bedford wrote to the Royal College of Surgeons with a covering letter from Sir William Denison (Appendices I and II). He mentioned what he had in mind, and asked that such students of Saint Mary's who passed in the college might be remitted one year of their time of study there. He pointed out also how advantageous it would be, both to the colonies and to the motherland, if their mutual ties could be strengthened in this manner. The college, however, was in no way sentimental, and regretted that as Saint Mary's had less than 100 beds, it could not accede to this request.[6]

As he was unable to obtain pupils from the other colonies, and as very few were available in Tasmania, it was inevitable that Dr. Bedford would not be able to establish and maintain a medical school on the lines of the memorandum prepared for his committee of management by himself and Mr. Arnold. This Thomas Arnold was a son of the famous Dr. Arnold, of Rugby, and a younger brother of Matthew Arnold. He held the position in Tasmania of Inspector of Schools, and whilst in the colony married Julia Sorell. Of their children, Mary Arnold afterwards became Mrs. Humphrey Ward, the distinguished writer, whilst Julia married Leonard Huxley and was grandmother of Aldous and Julian Sorell Huxley, so well known to this generation. This memorandum is attached as Appendix III.[7]

The Closing of the Hospital and School.

As the end of the year 1859 approached, great changes were impending in the administration of the hospitals of the colony, and the very existence of Saint Mary's was threatened. The Home Government had notified the local authorities that from the first day of 1860, the old colonial hospital, which for some years had been known as Her Majesty's General Hospital, would cease to function as an establishment for convicts. In anticipation of such inevitable changes, a joint committee of both houses of the Tasmanian legislature had, on October 27, 1858, presented a report in relation to the policy to be followed in regard to the hospitals of the island. Of this committee, Bedford was a member. Launceston presented no difficulty. Parliament voted £,2000 in place of the sum of £1,000 recommended as an annual grant to the Cornwall Hospital, founded six years earlier, as well as £12,000 to provide a new building for the sick in Mulgrave Square. At Hobart Town the conflicting claims of Her Majesty's General Hospital and Saint Mary's Hospital had to be considered. It was found that at the former no less than 71 beds were occupied by disabled and infirm poor of both sexes—and this in spite of the fact that all men of that class were supposed to be supported at Port Arthur. The Government was faced with the decision as to whether it should keep up both hospitals or by reorganization make one do the work of both. In spite of all that Bedford and his friends could do, the choice fell on the government hospital which it was proposed to conduct for the sick poor of the town and district, with an honorary staff as well as a resident surgeon, the committee estimating that "the number of sick, both paupers and self-paying patients, may, for the future, be fairly estimated not to exceed one hundred, and destined, in all probability, to diminish". This was indeed a tragic blow for Bedford. The determination may have been arrived at on its merits; but it is hard to dismiss the possibility that political enmity (he had been a member of the Legislative Council since 1856), as well as events at the orphan school and even resentment at his father's reforms of the early twenties, may not have, each in its measure, influenced those responsible. Be that as it may, the decision was made and the fate of Saint Mary's sealed.

Bedford struggled on, but with the general hospital now open to the labouring classes as well as paupers, competition pressed harder and harder on his hospital, until at last his trustees had to offer it for sale to the Government. At the same time Bedford submitted a claim to them for £2,000, which sum he considered as in part at least the value of his services as surgeon and manager for the previous nineteen years. These are his views in his own words:

> I still hold these views; I trust no scheme of attending the sick poor will be an unpaid one. I have been referred to as a great gainer by my public appointments. I have served the Government upwards of thirty years and never had £300 a year pay from the public service (except for temporary increases), but, counting my services at what is paid for the same at the Cornwall Hospital, there is due to me for Saint Mary's £7,200, the interest of which at 6% is a larger sum than I have ever enjoyed from the public.

It would be wrong to conceal the fact that there was considerable resentment on the part of the Press and the public at the presentation of this claim. On October 3, 1860, a bill was read in reference to Saint Mary's trust and Dr. Bedford's belated charge for services. The select committee appointed in due course presented its findings, which did not clarify the issues. They did comment that Dr. Bedford had, in their opinion, been ill-advised in not presenting an annual account, but had probably been prevented by the limited resources of the hospital. The report was adopted; but after that, all is vague, and I can find no definite information as to when Saint Mary's actually ceased to admit patients and closed its doors, or whether any amount was actually paid to its surgeon.

LATER YEARS.

These must have been bitter months for him—not only to see the hospital he had founded and guided so well for nineteen years come to its end, but to have to endure as well the detestable comments and innuendoes following his belated claim. His large family, too, had to be placed in life, and required more opportunity than Hobart Town afforded. In Sydney his brother-in-law, Sir Alfred Stephen, Chief Justice, would be at hand to afford his support, and so the decision was made to move to that city.

On July 18, 1863, a large number of medical practitioners assembled to bid him farewell. Dr. Officer, his colleague for so many years, presented an address signed by no less than fourteen medical men. Dr. Officer referred to himself as the oldest member of his profession in the city, and expressed the feelings of all when he stated that wherever one might go in the British dominions, he would meet no superior to Dr. Bedford as an accomplished practitioner of medicine and a thorough gentleman. Four days later Sir Valentine Fleming, at a large muster of friends, presented him with a massive silver salver on which was a purse containing two hundred and fifty guineas. So, with such expression of the admiration and affection of the community he had served so well, he left us and commenced work anew at Sydney. It is beyond the scope of this address to say what he accomplished there; but it is in keeping with what we have seen of his character and scientific attainments to know that he was one of the founders of the Royal Prince Alfred Hospital. His son, Guthrie, adopted his father's profession, and is shown in the first annual report of the Sydney Hospital for Sick Children, which covers the year 1880, as not only honorary secretary to the board of management, but apparently an honorary surgeon as well.

When Edward Bedford died at Hunter's Hill on February 24, 1876, it could truthfully be said that a great man had passed. He was a physician and surgeon of marked accomplishments, as well as a devout Christian gentleman who did much for his profession. As a teacher he will be remembered as the first systematically to attempt the foundation of a preparatory school of medicine in Australia. His venture of Saint Mary's Hospital is, as far as I am aware, the first intermediate hospital to be established in these colonies. As a surgeon—a man who in pre-anæsthetic days could ligate a carotid aneurysm successfully, as he relates *inter alia* in a letter to his pupil Hobson in 1837, demands our fullest respect. My

hope is that this relation of certain aspects of his life and work will perpetuate the memory of a colonial surgeon who most faithfully served his generation.

ACKNOWLEDGEMENTS.

My first acknowledgement must be to my friend the late Miss Joan McLennan, then private secretary to His Excellency the Governor of Tasmania, Sir Ernest Clark, K.C.B., who from the archives of Government House beautifully transcribed the report on the outbreak of scurvy on the *George III*. Yet again Miss L. Wayne, M.B.E., has given her able and generous help. Miss Ruth Bedford has sent me family data and allowed the use of the delightful portrait of her grandfather. My friend, Dr. R. Scot Skirving, too, materially helped with information as to Dr. Bedford's work in Sydney. To my son, W. E. L. Crowther, I am indebted for the illustrations of the two hospitals. To them and to Dr. James Sprent, who as President of the Tasmanian State Committee of the Royal Australasian College of Physicians invited me to give this address at our annual meeting, I offer my sincere thanks.

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(4) E. S. Hall: "On the Medical Topography and Vital Statistics of the City of Hobarton . . . for 1855", *The Australian Medical Journal*, April, 1858, page 95.
(5) E. S. P. Bedford: Report, Saint Mary's Hospital, 1856, pages 9 and 11.
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APPENDIX I.

Contributions to Scientific Societies et cetera by Dr. E. S. P. Bedford.

"Expression as Applied to the Fine Arts", "Hobart Town Mechanics' Institute: Lectures Delivered during the First Part of the Session of 1849", page 28. "Observations upon the Condition of Young Marsupial Animals", *Tasmanian Journal of Natural Science*, Volume I, 1842, page 187. "On the Epidemics of 1852-3", *Papers and Proceedings of the Royal Society of Tasmania*, 1854, page 460. "On the Origin of Nervous Force", *Papers and Proceedings of the Royal Society of Tasmania*, December, 1863, page 3. *The Australian Medical Journal*, October, 1857; title unknown. Report, Saint Mary's Hospital, Hobart Town, 1856. Report, Saint Mary's Hospital, Hobart Town, 1859. "On the Reappearance of Scurvy in the Merchant Service", *Royal Society of New South Wales Transactions*, 1867, page 58. "Remarks on the Dry Earth System of Conservancy", *Royal Society of New South Wales Transactions*, 1868, page 113.

APPENDIX II.

St. Mary's Hospital,
Hobart Town,
Van Diemen's Land,
18 November, 1853.

Sir,

In the year 1841 I established a Hospital in this City, chiefly used by seamen of the port, free persons and people from the interior of the Island. It has gone on increasing in the number of its in-patients, averaging now between 30 and 40. A building was erected in 1847 capable of holding 60 beds, and the Legislative Council at its last session voted £2,000 to endow three beds, and by this means pay off the only debt on the building fund of this institution.

When I projected this Establishment I had in view the formation of a preparatory Medical School, which would stand in relation to the future studies of pupils as a Grammar School does to a College—a school where pupils might be taught Anatomy, and attend hospital practice from the period of entering on their apprenticeship.

I need not point out to the members of the Council that, while in large cities and hospitals advantages are to be obtained by students which no small hospital can afford, yet that at the commencement of a pupil's study a free access to a small number of cases, with a constant observation of disease, and the early practice of dissection, affords the best means of laying the foundation of a sound and practical professional education. It is the true way to render his future residence at a school of medicine and attendance on a large hospital really useful to him.

I speak, I must say, from personal experience on the subject; and I am sure that my Colonial Hospital experience as a pupil rendered doubly advantageous to me my attendance in London. I am desirous to secure to the medical students in this Colony, through the College of Surgeons, what I believe will be a great advantage to them. I desire that the Council will be pleased to recognise certificates of Hospital attendance at St. Mary's Hospital for three years with anatomical instructions and dissections during that time of not less than 60 lectures or demonstrations each year, and in consideration of such three years' attendance, that the Council will allow candidates to be examined for the diploma of the College after two instead of three winters' residence in London. In which case the Council must be good enough to recognise me as a teacher of Anatomy.

I am known very well to Mr. Guthrie and Mr. Henry Hancock, also to Mr. Partridge and Mr. Soden, jr., of Bath.

The effect of such a step would be to unite a colonial with a home medical education. At present, with the rising importance of these colonies, and their rapidly increasing wealth, they are contemplating the establishment of Universities, and think of completing in the colonies medical education.

To my mind nothing can be more injurious than such a proceeding, and the remedy for it I believe to be the one I pointed out; the colonies to prepare students in their early course, afford good elementary instruction of a practical character, and the College of Surgeons to recognise such early training as part of the College course.

I might offer another reason; it is not only most useful to the future professional career of the pupils, and thereby to the Colony, but such relations tend to bind the colonies to the mother country, and all such ties, whether small or great, should not in the present days be lost sight of.

I have the honour to be, Sir,

Your obedient servant,
E. S. P. BEDFORD.

To E. Balfour, Esq.,
Secretary, Royal College of Surgeons.

P.S.—I submitted this letter to the Lt. Governor, who was good enough to favour me with his opinion, and His Excellency allows me to forward it to the College.

[COPY.]

Government House,
My Dear Sir, 23 November, 1853.

I have read attentively your letter to the Secretary of the College of Surgeons, and I trust that your application to that body will be successful.

I fully enter into your views both as to the benefits which would accrue to the colony by combining for medical men, and indeed for all, an English with a local education, and as to the desirableness of drawing as close as possible every link by which our connection with the mother country can be strengthened.

I wish you every success in your endeavours to promote these objects, and have every confidence that the zeal and energy that prompted you to undertake the erection of St. Mary's Hospital will meet with its proper reward in seeing it recognised by the C. of Surgeons in London as a local school of medical instruction.

Believe me,

Yours very truly,
(Signed) W. DENISON.

APPENDIX III.

The ordinary system for the early part of medical education in England is to apprentice young men to general practitioners with whom they reside until they proceed to London, to attend the course of instruction laid down by the college.

The chief benefit of this plan is the control under which the pupil is kept: the information he receives is generally but vague, and in few instances is it conducted upon any plan. The effect of an apprenticeship of this kind is, that the pupil goes to London without having had any mental discipline and quite unprepared for his entrance upon hospital practice. It is speaking mildly of this system to say that in most cases it is lost time.

It has been in the contemplation of some to complete medical education in the colonies. But could the persons be procured to give instruction in the different branches of medical education, and the sciences connected with it, the pupils would not be numerous enough to pay the expenses of their instructors. The hospitals in the colonies are not large enough, nor the population sufficiently dense, to afford such a number of cases as would give a proper field for an advanced student's observations.

But in a colony a medical school might be attached to a small hospital, in which young men intended for the pro-

MEDICAL SCHOOL ATTACHED TO SAINT MARY'S HOSPITAL.

Lecturer on Anatomy, etc.: Edward S. P. Bedford, Esq., Fellow Royal College of Surgeons, England.
Lecturer on Classics and Mathematics: Thomas Arnold, Esq., B.A.
Classical and Mathematical Tutor:

	7 a.m. to 8 a.m.	8 a.m. to 8.30 a.m.	12 noon to 1 p.m.	1 p.m. to 2 p.m.	4.15 p.m. to 5.15 p.m.	5.30 p.m. to 6.30 p.m.
Monday	Virgil.	Homer. Arithmetic.	Hospital Practice.	Anatomy.	Voltaire. Charles XII.	English History.
Tuesday	Livy.	Schiller. English Grammar.	Hospital Practice.	Agricultural Chemistry.	Voltaire. Charles XII.	Looking over Themes of Euclid.
Wednesday	Virgil.	Herodotus. Arithmetic.	Hospital Practice.	Anatomy.	Half Holiday.	
Thursday	Livy.	Homer. English Grammar.	Hospital Practice.	Agricultural Chemistry.	Looking over Exercises in Euclid.	Greek History.
Friday	Virgil.	Schiller. Arithmetic.	Hospital Practice.	Anatomy.	Livy.	English History.
Saturday	Greek History.	Herodotus. English Grammar.	Hospital Practice.	Examination. Clinical Lecture.	Half Holiday.	

Age at entrance: not less than sixteen. Terms: £150 a year, payable in advance.
Vacations at Christmas, June and Easter: one week.

fession could receive their early training, where the restraints and discipline of apprenticeship might be combined with introductory professional instructions at the same time that the classical education of the students is continued; it would stand in relation to his future professional studies as a grammar school to a collegiate course of general education.

A small hospital to the young student is the most useful; there, by a constant observation of a few cases, he has his senses gradually accustomed to the observation of disease, and he becomes fitted for those opportunities of comparison afforded in large hospitals, and hospitals for separate classes of disease, and is not bewildered by the number of instances and the resemblances there presented to his observation.

The plan upon which it is intended here to carry this object into effect, is to receive as apprentices for three years not less than twelve pupils, who are to be boarded with a married gentleman who will act as their tutor, keep them under proper control, undertake part of their instruction and see that they duly complete the work prescribed for them. Upon him would also rest the duty of attending with them at public worship at least once on Sunday, and such instruction and attention to their religious duties as would devolve upon the head of a family, or chief master of a grammar school with resident pupils.

The student should possess a competent knowledge of the Latin grammar and be able to read Greek previously to his admission. The course in Latin might then embrace portions of Virgil, Horace, Cæsar, Livy, Cicero and Tacitus, and would connect itself with information on Roman history and Roman manners; with regard to Greek, considering that the capacity for acquiring languages varies so much among different persons, it would be better perhaps to form a Greek class than to require all the students to learn it without exception. But a course of lectures on Greek history, including a sketch of Greek Literature and Philosophy, might profitably be attended by all to improve them in the power of expressing their thoughts. They would be exercised in prose composition by making them write a theme every week alternately in Latin and English. Those who were not at first sufficiently advanced to do this might translate instead of composing.

Among modern languages French ought certainly to be taught to all the students as a matter of course, but the study of German or Italian should be left on the same footing as that of Greek.

The lessons in English history might easily be made the vehicle of imparting an adequate amount of information respecting the contemporaneous history of other nations; in mathematics they will be taught Euclid, the study of which forms a most valuable intellectual discipline, besides arithmetic and algebra.

The students will be required to attend daily on hospital practice, when they will, with the medical officer, visit the wards of the hospital, be instructed in dressings, bandaging etc., and as they advance in information in the method of observing disease, a portion of the time will be employed in practical pharmacy. A thorough knowledge of anatomy is indispensible. The student will attend a first course of descriptive anatomy, illustrated by dissections, preparations, plates and diagrams.

In teaching anatomy, physiological instruction will be combined, and in going over the different organs by reference to comparative anatomy the functions will not only the more clearly be understood, but a fair knowledge on comparative anatomy given.

The elements of general anatomy, physiology and pathological anatomy will follow, so as to give the students a clear view of the most important facts and an insight into general pathology. These subjects will occupy an hour three days in the week during the first year.

Two days will be devoted in each week in the first place to a short course of agricultural chemistry. The practical nature of this subject, the investigation of the nature of the soil and its products, their treatment by manure, are all subjects analogous to the proper study and practices of medicines; striking yet simple in their nature, they not only form a good introduction to future studies, but a means of acquainting the pupils with the principles of chemistry and physiological botany. The actions of poisons are marked and uniform, that of antidotes simple and decided, and studying a simple diseased action and its treatment is a good introduction to the study of more extensive disease. A short course of poisons and their antidotes will therefore follow the instructions on agricultural chemistry.

Morbid poisons as smallpox etc., which will form the next course, afford good instances of certain causes producing defined effects, in some instances capable of prevention and in others of cure; the symptoms are subject to some known limits, and when cured generally give way to a defined treatment.

Many urinary diseases show the operations of a poison introduced from without, but by detention of that which should be eliminated, producing poisons within the body, affording instances of more complex action, and including some of the most important and common diseases. This last will complete this portion of instruction for the year. On Saturday an examination will take place of the week's work, and a clinical lecture be given, which will embrace the following subjects taken in order: observation of disease, symptomatology, auscultation, dislocation, fractures, wounds, burns etc.

In the clinical instruction the object is, first to teach how to observe, then instruction is afforded in the least complicated affections, and those entirely of a local character distinguished from the morbid poisons that produced local affections from previous general disturbance.

In the second year, instead of descriptive anatomy the students will be taught regional anatomy and particular pathology. The other lectures will be on the same subjects as the first year, but the clinical instruction will include diseases of the eye. The diseases of the eye afford a good opportunity for observations on the effects of disease in different tissues. The results of treatment and disease are open to inspection, and local and constitutional disease in one organ can be compared.

In the third year anatomy will be taught, either descriptive or regional, as may appear most advisable. The clinical instruction will include observations on the most usual diseases of the colony.

Dissections will be practised by the pupils in the second and third years. They will attend all post-mortem examinations from their entrance to the hospital.

THE TREATMENT OF INGROWING TOENAILS.

By T. E. WILSON, M.D., M.S., B.Sc., F.R.A.C.S.,
Captain, Australian Army Medical Corps.

IN this paper it is proposed to discuss briefly the many operations that have been advocated for the treatment of ingrowing toenails and to enumerate the complications which I have seen among service personnel subjected to these operations. In addition, a method of treatment is described which has been found to give satisfactory results.

Ingrowing toenail occurs most frequently on the medial side of the great toe, less often on the lateral side of the great toe, and infrequently in other toes. Except that the rare subungual exostosis may be overlooked, the diagnosis of ingrowing toenail is usually apparent. An ingrowing toenail is often only a small part of the disabilities and deformities affecting the feet, and is in fact frequently due to them. No comparable condition develops in the fingers.

Since a nail grows only from the matrix of the nail root from which it glides forwards over the nail bed,[4][18][32] the relative ingrowing of a nail with respect to the paronychium must be due to the overgrowth of the latter. The pressure of the edge of the nail causes necrosis of a small portion of the paronychium and permits its infection. (Debility, dirt, diabetes, tight shoes and improper paring of the nails help to maintain the infection.) Granulation tissue soon develops, and the edge of the nail is overgrown. The proliferation of the granulation tissue increases the pressure on the edge of the nail, and a vicious circle is set up.[25] Eventually the nail may be covered by the granulation tissue.

It is usually because of the pain caused by the pressure of the side of the nail on the ulcerated paronychium that the patients report for treatment. By that time most patients will have in vain tried for themselves various conservative methods of treatment. Private economic reasons for persevering with conservative treatment do not apply to personnel in the services; consequently it is easier to persuade them to submit to operation.

Review of Methods of Treatment.

The first Australian discussion of conservative methods of treatment appeared in 1889.[16] In those days the methods used aimed at relieving the pressure on the nail edge by the application of caustics to the nail to soften it or to the hypertrophied tissues to reduce their bulk, the elevation of the edge of the nail with tinfoil or pledgets of wool soaked in antiseptic solution, the retraction of the soft tissues from the nail by a narrow strip of adhesive strapping around the toe, and the reduction of the thickness of the nail by scraping it (Figure I). Although these methods of treatment have been slightly modified since then,[2][7][9][17] there has been no appreciable increase in their efficiency.

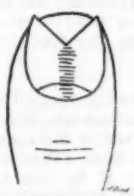

FIGURE I.
Redrawn from Dodd.[7] The centre of the nail is scraped with the blade of a pair of scissors. The edge of the nail is cut to a V and the corners are allowed to project.

The aim of conservative methods of treatment is to permit the paronychium to return to normal by removing the pressure on the edge of the nail and by eradicating the infection; but often these measures fail to produce more than a temporary improvement, and the care and attention that have been expended are only occasionally rewarded. Success is more likely if the nail is allowed to grow and curve over the end of the toe; the pressure of the shoe or sock on the end of the nail then tends to force the lateral edges of the nail upwards.[27]

The indication for operation is the failure of conservative methods of treatment, with the exception that in those patients who are also suffering from diabetes or arteriosclerosis it must not be undertaken because of the risk of gangrene.

That as humble a condition as ingrowing toenail should have such a variety of operations described for its cure suggests that many or all of these operations have various disadvantages and that a permanent cure by any method is not always easy. Short comments will therefore be offered on these operations.

The high recurrence rate following removal of the granulations and hypertrophied cellular tissues[9][26] or the avulsion of the whole or part of the nail[10][24] is sufficient to exclude them as useful procedures.

The earliest reference to radical operations for the treatment of ingrowing toenail is that of Dupuytren (quoted by Robbe[23]), who advocated complete excision of the matrix through a semilunar incision; but as it was introduced before the anæsthetic era, this procedure did not gain any popularity.

Wedge resection of portion of the nail and nail bed, after the method of Watson Cheyne (Figures IIA and IIB),

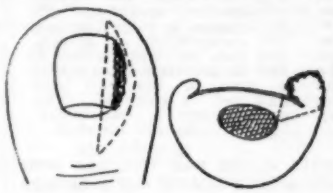

FIGURE IIA. FIGURE IIB.
FIGURES IIA and IIB: Wedge resection of the nail, nail bed and soft tissues after the method of Watson-Cheyne.

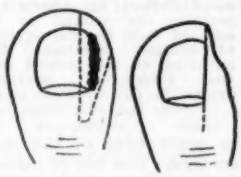

FIGURE IIIA. FIGURE IIIB.
FIGURES IIIA and IIIB: Redrawn from Heifetz.[13] Anger's operation for ingrowing toenail.[1] The block of tissue excised consists of all tissues to the side of the phalanx, with the exception of the skin flap.

or one of its modifications,[1][2][14][29][30] may produce satisfactory results if the soft tissues are replaced at a lower level than the nail. Despite statements to the contrary, the recurrence rate is high if this latter point is neglected. The resulting scar from this operation is sometimes tender, and a spicule of nail will grow up through the scar if the removal of the matrix of the nail root is incomplete. If infection is present it may persist beneath the nail and inhibit healing till the nail is removed, and the infection may even extend to the phalanx or to the interphalangeal joint. The latter is more likely if the joint is inadvertently opened at the time of operation.

The operation of partial amputation of the terminal phalanx together with the nail and nail bed, originally described by Hukill[33] and now a favourite of the orthopædic surgeons (Figure V), produces an ugly toe, the end

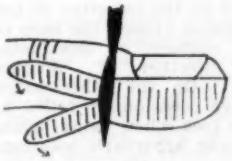

FIGURE IV.
Redrawn from Ney.[20] Two pedicles of the soft tissues are turned back and then replaced at a lower level than the nail, which is left intact.

FIGURE V.
Showing the globular appearance of the toe after the partial amputation of the terminal phalanx.

of which is nearly always tender. Occasionally, osteomyelitis of the phalanx or septic arthritis of the interphalangeal joint follows this operation, and while a true recurrence is impossible, spicules of the nail may appear in the scar and require removal later.

Bartlett[3] suggests that a wedge of tissue be removed from the side of the toe through an uninfected field

(Figure VI), so that the nail wall is pulled away from the nail edge. The advantage of this operation lies in the fact that primary healing of the wound is to be expected; but again, the disadvantage is the high recurrence rate.

In operations in which portions of the nail and nail bed are removed through an incision in the nail and eponychium without removal of the paronychium[12][29][30] (Figures VIIA and VIIB), it is difficult to be certain that

FIGURE VI.

The removal of a wedge of tissue through the uninfected area on the side of the toe, as described by Bartlett,[2] permits the wound to be sutured with the expectation of primary healing. The suturing of the wound and the subsequent scarring draws the paronychium away from the nail edge.

FIGURE VIIA.

FIGURE VIIB.

FIGURES VIIA and VIIB: Winograd's operation.[29][30] An incision is made through the eponychium as shown, and then the flaps marked A and B are turned back and a strip of the nail and nail bed is removed. The paronychium is left intact. No sutures are inserted.

the outer edge of the matrix of the nail root has been removed. The use of carbolic acid to destroy any remnants of the matrix of the nail root delays the healing of the wound.

Dolan[3] removes a block of tissue containing the nail, nail bed and granulation tissue, and covers the raw area with pinch grafts. The removal of that portion of the nail bed distal to the lunula (the sterile matrix) is unnecessary, for as has already been mentioned, the nail does not grow from this area. The sterile matrix is covered with the Malpighian layer of the epidermis, and if it is left intact and exposed it develops a hard non-tender surface.

For the same reason, covering of the bare area by undercutting the flaps, as Nuttall[31] suggests, is unnecessary.

Suggested Technique.

In my experience the most satisfactory operation for the cure of ingrowing toenail is the removal of the nail, the matrix of the nail root, and the hypertrophied paronychium. The sterile matrix is left uncovered and soon develops a firm protective layer. This procedure will now be described.

It is imperative that any infection present be controlled as far as possible before operation. Baths and dressings of antiseptics such as eusol usually suffice. Sometimes a preliminary avulsion of the nail is necessary to achieve this.

Nerve block anæsthesia produced by the injection of ten millilitres of a 2% solution of procaine around the base of the toe, mainly on the plantar surface, or anæsthesia induced by the intravenous injection of "Sodium Pentothal", is very satisfactory. On the other hand, although usually successful, I have occasionally failed to obtain absolute anæsthesia of the toes when using spinal anæsthesia produced by hypobaric or hyperbaric solutions of "Nupercaine".

The use of a tourniquet is said to carry the risk of sloughing of portion of the toe due to injury to and thrombosis of the digital vessels. This risk is lessened by avoiding unnecessary pressure on the tourniquet. A tourniquet facilitates the operation so that it may be performed in a few minutes, with the certainty that the removal of the matrix of the nail root is complete. The tourniquet does not cause pain if applied to the anæsthetized area.

An incision down to the bone is made on each side of the nail, as shown in Figure VIII. The incisions are directed proximally and towards the sides of the toe, but they must stop short of the line of the interphalangeal joint. Any granulation tissue present is removed, together with a wedge of hypertrophied paronychium, which is cut so that the edges of the wound fall together and no raw area is left to delay healing. A blunt dissector is passed under the nail to loosen it from the nail bed, and then the nail is avulsed. The eponychium is dissected up from the nail root until the capsule of the interphalangeal joint is displayed. As the eponychium is not concerned with the growth of the nail, this flap is kept as thick as possible. If it is too thin, or if it is traumatized with forceps, the flap may slough. An incision is made across the nail bed at the level of the distal edge of the lunula, and then the nail bed proximal to this incision is dissected off the phalanx until the block of tissue deep to the eponychium is removed. The careful use of a curette removes any remnants of the matrix—a firm, white, shiny tissue—that may have been overlooked at the proximal corners of the wound. The wound is dusted with sulphanilamide powder. The flap of eponychium is replaced (Figure X), but

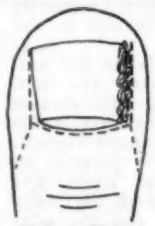

FIGURE VIII.

For details see text.

FIGURE IX.

For details see text. "A" is the uncovered sterile matrix. "B" is the matrix of the nail root being dissected up. "C" is the flap of the eponychium turned back.

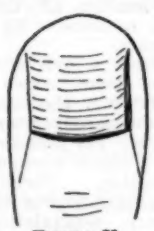

FIGURE X.

For details see text.

usually no sutures are inserted. The flaps are held in place by a firmly applied "Vaseline" dressing. The dressing should be reinforced if oozing occurs, but it should not be removed for at least ten days. Thereafter, the wound is dressed with a 1/1,000 solution of proflavine. For the first three days that this dressing is used a layer of *tulle gras* is required to prevent its adhering to the wound. Until the wound is dry and healed, usually three weeks from the time of the operation, contamination of the wound is prevented. When the wound is almost healed, dusting with proflavine power helps to maintain it in a dry state and to prevent infection. The application of proflavine powder to the wound immediately after operation has a deleterious effect, in that it further decreases the vitality of the traumatized tissues, thus causing necrosis and providing a nidus for infection. If possible, no weight is borne on the foot until healing is complete.

Discussion.

Ingrowing toenail is generally regarded as a minor complaint, although this idea is frequently at a variance with the patient's feelings on the subject, especially if he has already been submitted to one or more unsuccessful operations or if he has to march. There is no doubt of the pain and incapacity that may accompany this disease, or of the gratitude of many of the patients when cure is attained.

I have performed the operation described above on only 36 occasions. In some of these cases gross infection had been present, and healing took longer than three weeks, but in others healing was complete within that time. On discharge from hospital the patients were returned to full duty, and as far as I am aware there has been no recurrence or other complication. The exposed nail bed is not tender, and after a few weeks it becomes hard and dry and may even resemble a nail. Often the absence of a nail passes unnoticed, but if desired one may be painted in place. If the patient refuses to be without a toenail, Winograd's operation[29][30] (Figures VIIA and VIIB) is recommended.

Acknowledgement.

The Director-General of Medical Services has given permission for the publication of this paper.

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GAS GANGRENE AT AN AUSTRALIAN GENERAL HOSPITAL IN THE OWEN STANLEY AND BUNA-GONA CAMPAIGN.

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AND
W. P. Ryan,
Captain, Australian Army Medical Corps.

THE Owen Stanley and Buna-Gona campaign was, from the surgical standpoint, noteworthy for one feature, to wit, the relatively high incidence of anaerobic infection of wounds. Prior to this campaign Australian surgeons had, in the present war, encountered few cases of clinical gas gangrene. In the Libyan Desert, gas gangrene, though not unknown, was rare; in the Syrian campaign cases were somewhat more numerous; in Papua, both in the forest and in the swamp country, the incidence of anaerobic infection in wounds in which there had been much destruction of muscle or blood vessels, and which had been neglected, rose to high proportions.

Statistics.

During the four-month period from November 1, 1942, to February 28, 1943, 1,815 Australian battle casualties were admitted to and treated at the hospital, the great majority during the middle period of three months. Among the casualties 82 cases of clinical gas gangrene occurred (4·5%). Of these 82 patients, 12 died.

Besides these infections, 21 cases of gas gangrene occurred among 108 Japanese prisoners of war admitted to the hospital as battle casualties. These prisoners almost invariably arrived at the hospital in the last stages of neglect, and for this reason give a false picture of the disease. Thus they will not be further studied here. It is, however, only fair to state that the neglect was due either to unavoidable delay in the collection of the wounded, or more often to lack of treatment by the Japanese medical service.

The main statistics are set out in Table I.

TABLE I.

Site of Wound.	Number of Cases.	Amputations.	Deaths.
Buttock	13	—	2
Thigh (soft tissues) ..	18	—	1
Thigh (fractured femur)	19	4	5
Leg and foot	16	2	1
Shoulder and arm ..	13	4	2
Forearm and hand ..	7	1	—
Amputation stump ..	2	—	1
Trunk	3	—	—

This table gives the results baldly, but does not tell the whole story. For instance, many of the casualties with wounds of the buttock had severe injuries of the pelvic bones, with infection spreading in the intrapelvic muscles. Many of the buttock wounds extended into the thigh or abdominal wall. Multiple wounds were common and of great severity. Amputation was performed as often for the nature of the wound as for the extent of the infection; this is exemplified by the high rate of amputation for wounds of the arm. Death in several instances followed so-called heroic operations on patients arriving at hospital *in extremis*. One death was due to faulty blood transfusion, another to pneumonia. Exhaustion and emaciation were much in evidence among the earlier casualties—that is, amongst those who had marched and fought over the Owen Stanley Ranges—and doubtless these factors contributed to the mortality. Nevertheless the table probably gives as near an approximation to the truth as can be gained by anyone who did not actually see the casualties.

Diagnosis.

Fortunately, the diagnosis of gas gangrene is simple. In these cases the diagnosis was made on some or all of the following findings: the typical stench, the appearance of the tissues, the presence of gas exuding from the wound, the demonstration of gas in the tissues by X-ray examination, the presence of anaerobic clostridia in wound cultures.

The general signs of severe infection, which are those of shock and rapid blood destruction, were noted in many cases. Diagnostic points which perhaps are not generally known are discomfort and peevishness after operation—these are unusual among the wounded—rapidity and threadiness of the pulse, intense and rapidly recurring anæmia and icterus. To the uninitiated we would especially stress the first two signs stated above, and the necessity for the closest scrutiny of any patient displaying them.

Clinical Types.

A wide variation in clinical types was seen. These ranged from the classical, fulminating infection presenting the general signs described above, to cases associated with merely a local abscess around a retained missile. These latter cases with

frank pus formation were new to us, and were diagnosed only by the presence of gas in the pus and by the growth of *Clostridium welchii* in culture. In several of the fractured femur cases large collections of foul pus were present, as well as spreading infection along the muscles and intermuscular planes. No instance was observed in which the infection was limited to one muscle. Broadly speaking, approximately one-half of the cases could be described as mild to subacute, and the remainder as severe.

Three patients exhibited signs quite different from the others. In these instances there was little evidence of infection in the wound itself, but an acute, overwhelming cellulitic œdema spreading from the wound commenced four to five days after the actual receipt of the wound. In two of these cases the wounds were trivial. Death occurred in each case within forty-eight hours of the commencement of the œdema. The *Clostridium welchii* was isolated from two of these patients, and unidentified clostridia were isolated from all.

Bacteriological Findings.

Anaerobic clostridia were isolated in 48 cultures from 51 patients, the *Clostridium welchii* being present in 30. In the instances in which no cultures were obtained, the clinical diagnosis was undoubted. Control cultures from other wounds were not attempted. Neither facilities nor time was available for the differentiation and identification of the various clostridia.

It is regretted that more bacteriological examinations were not made; but in the stress and strain of battle conditions, when patients keep pouring in and all members of the staff are chronically overworked, the less obviously urgent tasks have to be overlooked. Also orderlies are only human, and they cannot be blamed if, when worked to a state of semi-stupor, they mislay an odd test-tube.

Cross-Infection.

It is believed that no instance of cross-infection occurred within the hospital, though conditions of work might have favoured such an occurrence. For instance, besides 1,923 battle casualties, 2,201 other surgical patients were admitted during the period under review. The wards were all canvas with earthen floors, which alternated between dust and mud. When the beds were full the overflow of patients was accommodated on stretchers under the beds. The operating theatre was constructed of galvanized iron and rough unpainted wood; it had a rough concrete floor, usually well besprinkled with mud from the boots of stretcher-bearers and others. Segregation of cases in any way at all was quite impossible.

Three cases of anaerobic infection did become apparent only after the patients' admission to hospital; but they are believed to be examples of latent infection, not cross-infection.

The details are as follows.

CASE I.—A minor tangential wound of the arm was excised in hospital two days after receipt of the wound. Two days after operation a fulminating, œdematous gas infection developed, and death rapidly followed.

This was the first case of this type of infection.

CASE II.—A penetrating wound of the thigh was partly excised in the field. The patient was admitted to hospital three days after being wounded. On the same day a bullet and a massive clot were removed through a new incision. The original wound looked clean and was dressed only. Two days after the second operation an early cellulitic reaction was noted around the original wound, and this progressed to a fulminating, crepitant œdema. Death occurred on the following day.

CASE III.—A penetrating wound of the popliteal fossa was superficially excised in the field. The patient was admitted to hospital three days after being wounded. On the same day a bullet was removed from the popliteal fossa, and the popliteal artery and vein were found to be perforated. The vessels were ligated. Hæmorrhage was not excessive. Thirty-six hours later amputation through the thigh was performed for a fulminating gas infection of the leg, not of the cellulitic type described in the previous case. Two days later, when the patient seemed to be on the way to recovery, he had a severe rigor during a "luxury" blood transfusion—he had had several previous ones—and died.

No other cases of gas infection made their first appearance within the hospital.

Treatment.

Treatment will be described under several headings.

Chemotherapy.

All patients with gas gangrene, as indeed all battle casualties, were given a full course of sulphanilamide (35 grammes). After allowance had been made for the amount of the drug administered before the patient's arrival at the hospital, it was given in dosage of six grammes *per diem* until the course was completed. Sulphanilamide powder also was dusted into the wounds, as will be described later. Possibly some of the newer sulphanilamide compounds may be more efficacious; but sulphanilamide causes less gastric disturbance than "M & B 693", the only other compound available in quantity. This is an important point when one is dealing with grossly debilitated patients.

Gas Gangrene Antitoxin.

Polyvalent antitoxin was given to 51 patients in dosage of 20,000 to 200,000 units, the usual dose being 50,000 units. In many instances 50,000 units were administered every two or three days. No patient had had any antitoxin in the field prior to his admission to the hospital, nor was antitoxin administered prophylactically to any patient who was not suffering from gas gangrene.

It is difficult, if not impossible, to assess the value of antitoxin; but all of us working here did get the impression that it had some beneficial effect.

Resuscitation.

The tremendous importance of adequate resuscitation need not be stressed here. Forty-nine patients received transfusions of blood and plasma. Many were kept alive only by repeated transfusions. The initial amount was usually one litre of blood and one litre of plasma. Mild reactions were not uncommon, and one case has already been described in which death was due to a "luxury" transfusion.

Efficient cleansing of apparatus is not possible when supplies of distilled water are scarce or non-existent. For this reason we learned to be chary with "luxury" blood transfusions.

A full course of anti-malarial therapy has, of course, to be given to patients receiving blood collected in a malarious area.

Treatment of the Wound.

Much has been written regarding the treatment of war wounds, and so far as the Australian army is concerned a definite policy has been laid down by the Director of Surgery. In this campaign possibly some new ground was covered. Patients arrived at the hospital at any time from twelve hours to six weeks after being wounded, the great majority on the second or third day. Some of the wounds had been thoroughly excised by surgeons working at advanced stations, some had been incompletely excised, some had not been touched. In all cases except three, gas gangrene was obvious on the patient's arrival at the hospital.

It soon became apparent that gas gangrene was occurring only in wounds which had been neglected, either by receiving no treatment at all, or by inefficient treatment. In fact, as has already been stated, clinical anaerobic infection was present in an extremely high proportion of neglected wounds in which there had been much destruction of muscle or blood vessels. It must be made quite clear that this is no disparagement in any way at all of the surgeons working in the field. Surgeons working at advanced stations in the field have many things to contend with; in Papua the disadvantages surely reached their peak, for surgeons lived and worked under conditions that can only be described as appalling. Also, no surgeon can handle more than a limited number of cases in twenty-four hours, or work for twenty-four hours out of twenty-four for very long. With a knowledge of these things the surgeons of this hospital wish to pay their tribute and acknowledge their indebtedness to their colleagues working forward to them.

Nevertheless, a policy had to be adopted as how best to treat these patients. One of us had had some success in a small number of severe cases in the Libyan Desert, in which radical excision was used; therefore it was decided to employ this wherever possible and to be conservative with amputations. At first in the longer-standing cases, whether anaerobic infection was present or not, our operations took the form of *débridement* and partial excision rather than radical excision; but we soon learned to rely more and more on radical excision, no matter how old was the wound. The reasons for increasing boldness were, first, that excision caused little or no local or general

reaction, and second, that several partly excised wounds needed reexcision a few days later. Finally, we became convinced that the time factor did not matter, and with adequate resuscitation, we excised the wounds as completely as the anatomical situation would allow. We saw no reason to change this policy.

It may be pertinent to note here that a good deal of nonsense is talked and written about excision of wounds. Amputation is the only perfect method of excision, and even that fails in a wound encroaching on the trunk. More often than not a compromise has to be arrived at between the pathological condition and the anatomical site. Nevertheless, if the injured tissues are dealt with as faithfully as is possible, and if adequate drainage is provided, a fair measure of success will be obtained. Judgement and conscientiousness are virtues in military as in civil surgery.

Drainage is not always easy to obtain, but it is of paramount importance. Healthy muscle frequently has to be sacrificed. Also, it must not be forgotten that fluid runs downhill, not uphill.

At the completion of operation, our custom was to cleanse the wound with hydrogen peroxide and saline solution, dust it with powdered sulphanilamide, fill it with "Vaseline", cover it with "Vaseline" gauze and enclose it in soft dressings or plaster. All fractured long bones were enclosed in plaster splints, one reason being that the patients had to be ready for rapid evacuation.

X-ray Therapy.

Only one patient was subjected to X-ray therapy, an adequate dosage being given. The case, which was one of the "cellulitic" ones, appeared quite hopeless and proceeded to a fatal termination.

General Remarks.

No final account of results can be given, as patients were evacuated rapidly to Australia. It can be stated, however, that we were informed by the consulting surgeon that gas gangrene ceased to be a problem after the patients left the hospital, and that few delayed amputations were found necessary.

Summary.

An account is here given of gas gangrene as seen at an Australian general hospital during the Papuan campaign and of the treatment adopted.

Acknowledgement.

We wish to thank the Director-General of Medical Services, Australian Military Forces, for permission to publish this report.

Reports of Cases.

A CASE OF ACUTE INTESTINAL OBSTRUCTION.

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Clinical Record.

AT 5 p.m. on February 22, 1944, H.C., a pipe-fitter, aged thirty-four years, previously in good health, developed mild generalized and abdominal "uneasiness", which he could hardly describe as pain. This persisted for two hours, when his bowels were opened, and immediately afterwards he was seized with acute pain referred to a point about two inches above the umbilicus, which caused him to groan and roll about on his bed. I saw him two hours later, when his abdominal pain was still agonizing, generalized and constant, but not colicky. He had vomited once shortly after the acute onset, and his bowels had again been opened. On examination, he was found to be a healthy looking, lean, muscular man, doubled up with pain. No abdominal distension was present, but he exhibited muscle guarding over the whole of the abdomen, and frank rigidity over the upper right rectus muscle. The maximum points of tenderness were in the latter area and above the pubes. Equivocal diminution of liver dulness to percussion was found, and there was no evidence of free fluid in the flanks. A well-healed, twelve-year-old McBurney appendicectomy scar was observed, and the hernial orifices were clear.

Despite his previous history of good health, a provisional diagnosis of perforated acute peptic ulcer was made, the assumption being that a small initial "leak" had caused the earlier discomfort, and that this, by tracking down, would later have accounted for the suprapubic tenderness found on examination. This diagnosis, however, was made with some reserve, owing to the fact that the patient's occupation involved the extensive use of molten lead, and also in view of a certain sluggishness of his pupil reactions to light. He was admitted to the Launceston General Hospital at 11 p.m. and prepared for operation. Examination of a blood film revealed no basophile stippling. A steady, full pulse, with a rate of 80 per minute, denied any coronary artery disaster.

At 12.30 a.m. on February 23, under ethylene and oxygen anæsthesia, a right upper paramedian incision was made. When the peritoneal cavity was opened, an ounce or two of straw-coloured fluid escaped, which at once confounded the pre-operative diagnosis. The stomach, duodenum and gall-bladder were found to be normal, and the incision was accordingly enlarged downwards. The examining hand found no adhesions to the parietes in the region of the appendicectomy scar, whereupon the small intestine was examined. This inspection revealed a mild degree of distension starting about half-way along the length of the small intestine and increasing slowly to a point a few feet only from the ileo-caecal junction, where the external diameter of the gut was approximately one inch. Here a kink was found, distal to which the gut was completely collapsed. The constriction was caused by a fan-shaped, fibrous tissue membrane, arising from a fibrous nodule lying in the mesentery, spreading out, and adherent to the surface of the gut for a distance of about two inches along a line half an inch from the mesenteric border. There were several small fæcal masses in the gut proximal to the constriction so caused, and it is thought that one of these had precipitated the acute obstruction.

The membrane was readily dealt with by ligation, division and inversion, and the suture line was lubricated with sterile "Vaseline", a portion of the nodule being excised for pathological examination. The loop of intestine was then returned to the abdomen and the wound was closed without drainage. Subsequent convalescence was uneventful.

Examination of sections of the nodule revealed fibrous tissue containing a few scattered lymphocytes, scarcely justifying a diagnosis of fibrosed lymph gland.

Comment.

This case is recorded as an example of acute intestinal obstruction with an atypical history and confusing clinical signs.

Acknowledgement.

I am indebted to Dr. C. Craig, Surgeon Superintendent of the Launceston General Hospital, for permission to publish this case.

REPORT OF A CASE OF HÆMANGIOMA CAUSING HERNIA.

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Clinical Record.

SIGNALLER C., aged about nineteen and a half years, states that he was informed by his father that when he was born he had a lump on his right side and only one testicle in the proper place; the other was believed to be the cause of the lump, and the doctor, at the time, said that it would be fatal to operate. On joining the army on April 15, 1943, the patient was examined by five doctors at Sydney, who were doubtful as to whether he was physically fit to be accepted, and finally classed him "B" on account of "direct hernia". The patient has had a normal life, and had never been troubled by his condition until about six weeks prior to his admission to hospital. At that time he was dispatch riding, and the front wheel of his motor-cycle struck a bump, which gave him a severe jolt. The hernia since then had grown

slightly bigger, and he had pain, sometimes a sharp stab on the lump and at other times just a dull ache. A letter from the patient's father states that when the boy was born the doctor told the father that the right testicle had not come down, but probably would descend as the boy grew older. He was taken back to the same doctor at the age of four years; the doctor stated that it would descend when the boy was about sixteen years old. The boy had not felt the lump since he was a baby.

On examination, a large swelling about two inches in diameter was seen extending from about one inch below the anterior inferior iliac spine downwards to about half an inch above Poupart's ligament. The lump gave an impulse when the patient coughed; it was soft and reducible. A small, hard lump the size of a pea could be felt in its lower border. No bruit was detected over it on auscultation. There was no testicle in the right side of the scrotum, and no spermatic cord could be felt. The patient was shown at a clinical meeting, at which about sixty medical men were present, and the condition was diagnosed as an interstitial interparietal hernia.

At operation under spinal anæsthesia an incision was made as for an inguinal hernia, but extending higher up over the lump, the skin and superficial fascia were divided and the external oblique muscle was cleared. The lump under the external oblique muscle gave a slight bluish appearance to the muscle. The external oblique muscle was snicked over the lump, and blood immediately started to gush through the opening. The incision was quickly enlarged and the under surface of the external oblique muscle was cleared. A large area, about two inches by two inches, was then seen to consist of what looked like erectile tissue, which bled wherever it was touched. Because of the blood loss a blood transfusion had to be started, and clamps were quickly put all around the bleeding area in the muscle and this area was excised. The hole in the internal oblique muscle, on completion of this excision, extended from the anterior inferior iliac spine for two and a half to three inches downwards and to the junction with the rectus sheath medially. A large hernia was under this. The transversalis fascia and peritoneum were plicated, and an attempt was made to fill the space by interlacing a piece of the external oblique muscle and also a piece of *fascia lata* from the thigh joining the rectus sheath down to Poupart's ligament, after the spermatic cord had been found and traced down, and an immature testicle the size of a bean had been found behind the pubic bone; both were removed at the internal abdominal ring. The lower border of the external oblique muscle was then sewn down to the conjoined tendon and rectus sheath and the upper border of the external oblique muscle was overlapped over this and sewn down to the upper surface of the lower portion of the external oblique muscle as near to Poupart's ligament line as possible. The superficial fascia was sutured and then the skin.

Examination of sections showed the excised material to be a cavernous hæmangioma. The patient was allowed up on the twenty-first day and discharged to a convalescent depot on the twenty-fourth day. At this short time after operation there was no sign of recurrence of the hernia.

Comment.

The case is reported because we consider the condition to be very rare, a definite trap, and of great medical interest.

Reviews.

MEDICINE IN BRITAIN.

THE seventeenth publication in the series "British Life and Thought" is a small brochure entitled "Medicine in Britain", by Dr. Hugh Clegg.[1] The book has been written for the layman, to present an objective picture of British medicine and its practice, with respect to both its history and its functioning. Dr. Clegg indicates both the faults and the virtues of a system whose growth "has indeed not proceeded on logical lines", and whose structure "lacks the orderly precision of an engineer's blue-print". British medicine is, in fact, "a very human product, and in its prolonged growth from infancy to maturity has acquired some habits that are bad and many that are good". The ground covered includes sections under the following headings: "The British Medical Student", "The General Medical Council", "Licensing Authorities", "Indian Medical Service", "The Colonies", "Clinical Research", "The Medical Research Council", "Industrial Medicine", "London School of Hygiene and Tropical Medicine", "Cancer", "The Lister Institute", "Nutrition", "Lord Nuffield and Research", "National Health Insurance", "Origins of the Public Health Movement", "Vital Statistics", "The State and Personal Health Services", "Infectious Diseases", "The Mentally Afflicted", "Public and Private Practice", "Hospital Development", "The Hospital System in War", "A Laboratory Service", "The B.M.A.", and "Medicine and the Future". It will be seen from this catalogue that the field covered is extensive; yet the whole has been satisfactorily dealt with in forty printed pages. Possibly at the present time medical practitioners will find their greatest interest in the concluding section, in which Dr. Clegg briefly discusses the British Medical Association's proposals for a "General Medical Service for the Nation" and later developments, the idea of group practice and of a regional hospital service, and the Beveridge report. His final words are as follows:

> Sir William Beveridge . . . proposes that the comprehensive medical service should be provided for the whole community, and that towards its provision everyone should make a social insurance payment. If this is carried through, will it mean the end of private competitive medical practice in Great Britain? Will it mean the introduction of the whole-time salaried State medical service favoured by the Society of Medical Officers of Health? Doctors, on the whole, believe that just as private and State education exist side by side, so will private and State medicine.
>
> These questions are in the melting-pot of discussion and controversy. Whatever may be the final answers, in finding them the medical profession of Great Britain will not lag behind the general public in insisting that what must come first is the health and well-being of every man, woman and child in the country, and in pressing upon the Government that these must be secured whatever the cost.

The booklet contains several photographs of topical interest and is well produced and printed. We think that not only the general public, but medical practitioners also, will find in it much to stimulate their interest.

[1] "Medicine in Britain", by Hugh Clegg; 1943. London: Published for the British Council by Longmans Green and Company. 8¼" x 5¼", pp. 46, with ten illustrations. Price: 1s. net.

Notes on Books, Current Journals and New Appliances.

THE ELECTROCARDIOGRAM.

T. D. ORBAN, a medical student of the University of Sydney, has compiled from the text-books some "Notes on Electrocardiography", intended for the use of his colleagues, and has had them printed and made into a booklet of thirty pages.[1] A truer title would have been "Notes on the Electrocardiogram". The booklet sets out succinctly and systematically the sort of information on the subject that students are expected to acquire, and it is illustrated with diagrams of the conducting mechanism of the heart and line drawings of electrocardiograms. Axis deviation is explained better than in some standard text-books; but the section on "the effects of coronary disease" is not very lucidly set out. The employment of chest leads is not considered or illustrated. The author's accuracy can be called in question only in one or two minor points; for instance, he affixes the letters *Q*, *R*, *S* and *T* (without dashes) to the deflections in the illustrations of ventricular premature contraction, ventricular tachycardia and bundle-branch block. Mr. Orban's fellow students may well find the orderliness and brevity of his little book helpful and comforting.

[1] "Notes on Electrocardiography", compiled by T. D. Orban; 1944. Sydney: Australasian Medical Publishing Company, Limited. 9¼" x 6¼", pp. 30. Price: 3s. 6d.

The Medical Journal of Australia

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All articles submitted for publication in this journal should be typed with double or treble spacing. Carbon copies should not be sent. Authors are requested to avoid the use of abbreviations and not to underline either words or phrases.

References to articles and books should be carefully checked. In a reference the following information should be given without abbreviation: Initials of author, surname of author, full title of article, name of journal, volume, full date (month, day and year), number of the first page of the article. If a reference is made to an abstract of a paper, the name of the original journal, together with that of the journal in which the abstract has appeared, should be given with full date in each instance.

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THE STORY OF A COMPLETE MEDICAL SERVICE.

INTEREST in different types of medical service does not become less. This is fortunate. Although no doubt many doctors, politicians and some other members of the community have made up their minds about the kind of practice that they would like to see introduced and have perhaps committed themselves to seek its introduction, a large number of persons in each of these categories have done nothing of the kind. They have tried to keep an open mind and therefore welcome an opportunity to learn how special ventures in different types of practice have fared in different parts of the world. Even those whose studies or whose desires have led them to "know their own minds" sometimes have a natural curiosity that must be satisfied, and they too are willing to learn how other peoples fare when innovations or extensions in the arrangements for medical practice are introduced. This natural curiosity should be encouraged, for good points may be found in most schemes that are in operation, and although these people who know their own minds think their plans are complete, they may yet be susceptible to new ideas. The difficulty in all such matters is to free the mind of prejudice and to be sure that motives ostensibly of a high order are not mixed with or even subservient to others, less worthy, that are unconsciously suppressed.

In discussions that have taken place in this country in the Federal Council and in the several Branches of the British Medical Association, certain principles have been adopted, and these are recognized to be of the greatest importance. Among the points on which stress has been laid is the value of group practice. This has been discussed on more than one occasion and the arguments in its favour are well known; the difficulties have been discussed in these columns in the light of a report issued some years ago by the American Medical Association. Another point on which the Federal Council particularly has laid emphasis is that each member of the community should accept a certain measure of responsibility in regard to his own health. This contention is based on the simple psychological fact that men attach greater importance to, and value much more highly, something for which they have at least in part had to pay than they will something which has been given to them for nothing and for which they may not even have asked. A third point which has been stated by the Federal Council and accepted by the Branches is that a salaried medical service is not in the public interest. If we bear these three points in mind it will be valuable to become acquainted with some of the details of the medical service provided for his thousands of employees by Henry J. Kaiser, known the world over as the man who builds ships in five days and in incredible numbers and who performs unbelievable feats in the construction of aeroplanes and in other engineering ventures. The story of this service has been told, not as we should have wished, by its medical creator, Dr. Sidney Garfield, or even by Henry Kaiser, but by Paul de Kruif, who apparently specializes in the writing of popular books on medical subjects. This statement is not intended to reflect in any way on the value of the book. On the contrary, being written by an experienced popular writer it is the more likely to appeal to the general reader, and that no doubt is the author's intention. Had the book been written by a medical man, it might have been more readily sought on that account by medical readers. At the outset, therefore, the hope must be expressed that medical men and women will not be deterred from reading the book by its challenging title, "Kaiser Wakes the Doctors". Some allowance must be made for the author's enthusiastic journalistic style. If in order to drive a lesson home the author makes some of his medical statements a little sweeping, we may allow him his point. His enthusiasm is justified. No one could undertake to tell this tale of achievement and not become elated in the telling. Occasionally the author makes some unpleasant reflections on the attitude of organized medicine, that is, of the American Medical Association, towards methods that were being introduced. With these *ex parte* statements we do not propose to deal. What is intended is that something shall be known of the complete medical service that was created by a man who knew what he wanted and had enough faith and courage to succeed. For this reason we should like to know that Paul de Kruif's book had been read by every doctor in Australia.

When Henry J. Kaiser first decided to institute a medical service for his employees, he was fortunate that the very man he needed was at hand. This man was Dr. Sidney Garfield. Garfield had already shown that the kind of service that Kaiser needed could be run successfully if the cooperation of the employees could be obtained and nothing but the very best in equipment and personnel was used. The story of the Kaiser medical service is thus the story of Sidney Garfield and begins in 1933 with his journeying into the California desert where the Los Angeles aqueduct was being built. Along a stretch of 190 miles between the site of the dam and one little town some five thousand men "worked, frizzled in the hellish heat, got hurt, were sick, and had no medical care at all". Under the State industrial compensation insurance law, when men were hurt in accidents they had to be taken all the

[1] "Kaiser Wakes the Doctors", by Paul de Kruif; 1943. New York: Harcourt, Brace and Company. Sydney: Angus and Robertson, Limited. 8" × 5½", pp. 164. Price: 15s.

way to Los Angeles. It was among these five thousand men that Garfield started practice. We are told that for Garfield food and medicine meant group medicine "centralized and streamlined under one clinic and hospital roof". When Garfield had saved two thousand five hundred dollars from his practice he went heavily into debt and built a little twelve-bed hospital at a place with the cheerful name of Desert Center. He built his hospital on the small room and not on the ward plan. He was satisfied with nothing but the best in the matter of furnishings; he installed modern surgical, laboratory and X-ray equipment; and the whole place was air-conditioned. At first the up-hill work was tremendous, but eventually a plan was made by which the men paid half a dollar per week into a medical fund (95% of the men joined), and this entitled them to medical service, complete in every sense, and hospital treatment. The insurance companies paid a proportion of their premiums to the scheme and injured workers were cared for. In two years the hospital was paid for and Garfield extended his work. By the year 1938 he had built three hospitals and paid for them and their equipment. He had engaged first-class practitioners and paid them good salaries and had done the same with nurses, technicians and other members of the hospital staff.

We must now return to Henry Kaiser. He had undertaken to build an enormous dam and wanted to arrange a medical service for his men. The details of the fascinating story cannot be told in this place. It is really a repetition on a larger scale of what Garfield did at Desert Center. An old hospital had to be rebuilt and opposition had to be faced. The same kind of arrangement was made as at Desert Center, the men paying half a dollar a week to the fund. And soon the women were included at the same figure. An interesting point is the relationship of private practice to the salaried service provided for the workmen. It was thought that the income of the doctors engaged in private practice among the Government people and the merchants of the place, who were outside the health plan, would fall. But it did not fall—it went up by 10%. The reason given is that the obviously good results of the group medical care of the workers' families induced those outside the plan to seek advice more readily. When Garfield gave evidence some time later before an inquiry set up by the Senate of the United States, he attributed much of the success he had obtained to the fact that people came for advice about early symptoms because there was no factor of medical cost to keep them away. This is probably quite correct, and much the same claim has been made in this country on occasions in connexion with friendly society lodge practice. Kaiser's programme of shipbuilding brought him face to face with problems of health larger by far than any he had had to deal with before. Some idea may be gathered from the fact that in one centre, Vancouver, the population rose (almost overnight, we are told) from 16,000 persons to something over 50,000. In all the centres of Kaiser's activity the same kind of medical service has been inaugurated. In his workshops work is found for even those who suffer from obvious disabilities—there is no medical examination before enrolment. All kinds of illness are covered and treated, even venereal disease. It must be agreed, as Kaiser contends, that many men are physical wrecks because they have never had decent medical care, and everyone must agree that men below normal physical standards, even in the lower grades, will be better in every way for any work that they are able to do.

The chief object lesson that can be drawn from this book is that medical treatment "of the Mayo Clinic variety" can be provided if the community wills it and is prepared to make reasonable payment. The men treated in the several schemes organized by Garfield make a *per capita* payment of 26 dollars a year, and this amount is doubled when wives and children are included. This is by no means a small amount, but it pays for hospital treatment with all its accessories as well as for treatment given by the doctors. From the medical point of view it is important to note that the whole organization has been planned and controlled throughout by the same medical head, who is an active practitioner. There is much about Garfield's type of group practice of which careful note should be made.

Current Comment.

SWEET TASTE.

THE investigation of the sensation of taste presents fewer difficulties than that of any other special sense, for the mathematical and physical complexities which beset vision and hearing are absent, as also is the large and utterly unclassifiable variety we find in odours. Tastes are few in quality and must be based on morphological elements of relative simplicity; four types of taste bud have been described, and these probably correspond with four primary sensations. Despite this fact, no chemical foundation for the sensation of sweetness has as yet been discovered, though much research has been directed towards this problem. Of course, we all know the association between plurality of OH groups—or perhaps more correctly CHOH groups—and sweetness such as we find in sugars, glycerine, and the polyhydric alcohols, sorbitol and dulcitol; but this throws no light on the sweetness of saccharine, dulcine and lead acetate. Different human beings react differently to the same sapid material; thus phenylthiocarbamide, related to the sweet dulcine, is bitter to most persons, but to some 33% (and probably from a Mendelian recessive factor) it is tasteless. That stereochemical configuration should determine taste need cause no surprise; dextro-rotatory aspargin is sweet, whilst the lævo isomer is tasteless; α dextro glucose is sweeter than the β form—it is the old story of Emil Fischer's lock and key.[1]

In 1941 Dahlberg and Penczec investigated the relative sweetness of cane sugar, glucose, levulose, maltose and lactose. They came to certain conclusions which have been fully confirmed.[2] (i) The relative sweetness of several sugars varies with the concentration. Glucose in ordinary concentrations has a lower sweetness than cane sugar, but in 40% solution it comes level with cane sugar. The sweetness of glucose, levulose, maltose and lactose increases fairly parallel with rising concentration. (ii) Levulose is sweeter than cane sugar, but different numerical values have been given by those who have investigated this relation. (iii) The sweetness of one sugar in solution is often enhanced by the presence of another sugar. According to relative taste measurements, a mixture of 10% cane sugar and 5·3% glucose ought to have the same sweetness as 13·5% cane sugar; but actually it equals 15% cane sugar.

[1] A. T. Cameron: "The Relative Sweetness of Sucrose, Glucose and Fructose", *Transactions of the Royal Society of Canada*, Volume XXXVII, 1943, page 11.

[2] *New York State Agricultural Experimental Station Technical Bulletin*, Number 258, 1941.

To the Australian, whose sugar, with the exception of a trifling amount of beet product from Victoria, is from the cane, this type of research may appear academic; but to the English-speaking Americans it has an important economic complexion, for North America north of Mexico does not grow the sugar cane, but can produce enormous quantities of glucose derived from maize. In recent years, largely owing to American salesmanship, a vogue of glucose eating has invaded Australia. This is particularly foolish, as all the starch we consume as food in bread, cereals generally, potato, tapioca and pulses is converted into glucose in the bowel and is absorbed as such; so why buy glucose when we are constantly manufacturing our own? Still, it would be dangerous to deny that an academic pursuit can one day have a practical application. At the present time our taste sense is concerned with the æsthetic in nutrition, for the sensations arising from the stimulated end-organs in the tongue are intimately commingled with those from the olfactory receptors in the nose, and even with the purely tactile as jellies and crisp biscuits and breakfast foods prove.

PRIMARY ATYPICAL PNEUMONIA.

MEDICAL LITERATURE has for some time been liberally scattered with accounts of a variety of pneumonia which is no real novelty, but which has so flourished under military conditions that considerable knowledge of its characters has been gained. It is cheering that numbers of these accounts are accurate and full from the purely clinical standpoint, because with sufficient knowledge or experience of its features it may be recognized without recourse to the accessory methods of investigation. Among other recent accounts are those of C. A. Owen[1] and R. J. Needles and P. D. Gilbert,[2] both of which give an excellent description of this pulmonary infection. Owen describes his observations in 701 cases, and Needles and Gilbert studied 125 cases, this latter account including the autopsy findings in one fatal case. Though this condition was discussed at some length in a leading article in this journal only last November, in the light of several contributions to the literature, it seems desirable to summarize the clinical features from the articles of Owen and of Needles and Gilbert—their descriptions tally very well with the signs and symptoms of the cases observed in this country. Usually the infection is mild. The disease (we remember that Reimann insists that it is a syndrome and not a disease) is communicable, particularly under the special conditions of military training camps, which seem specially to foster most of the ordinary infectious diseases which affect young people. The incubation period is usually set down in the literature as about two weeks, and as the onset is usually insidious, a local epidemic may steal into a camp or school and severe cases arise perhaps before the true nature of the trouble is realized. Malaise is constant in varying degrees; there is often a sore throat and sometimes coryzal symptoms are present. In fact investigation of patients walking about with running eyes and nose and coughing will sometimes reveal the typical lesions in the lungs. The febrile period may be slight and brief; pulse and respiration are usually rather low, but in serious cases temperature and respiration rate in particular may be much raised above normal level.

There is usually a relative or absolute leucopenia, but leucocytosis occurs in severe cases. Neither of these series showed eosinophilia, but it has been observed by other workers, and recalls the "eosinophilic pneumonia" of Löffler. Rigors are not observed, neither is the pleuritic pain of the ordinary pneumonia found, though deep-seated aching in the chest is very common, especially in the substernal region. In fact, in general it may be said that this disease differs widely, as Owen remarks, from the classic lobar and bronchial types of pneumonia. Several differences are obvious in the above description, but even more striking differences are found in bacteriological and radiological studies. This is not a bacterial disease. The scanty sputum, which is occasionally blood-streaked, contains only the usual bacterial flora of the mouth. Plugs obtained directly from the lower respiratory passages during life and from autopsy material in the rare fatal cases are found to be free from bacteria. Radiological study reveals a characteristically more extensive lesion or series of lesions than physical examination might lead one to suspect. In fact a notable feature which helps to differentiate this condition from other forms of pneumonia, is the dissociation evident between the symptoms and the physical signs and between either or both of these and the X-ray findings. The latter include accentuation of the hilar shadows with projection to the periphery, patchy confluent dense areas and a generalized increase in lung markings. One most important point is that there is sometimes a striking resemblance to pulmonary tuberculosis. Indeed cases have been seen in Australia as elsewhere in which a preliminary radiological diagnosis of tuberculosis was made, but proved quite inaccurate.

One feature which is not only characteristic but useful in diagnosis, is the presence of "sticky" râles best heard towards the base of the upper lobe in front, or the base of the lower lobe at the back. These râles appear early and persist late, even after the X-ray picture appears normal.

One or two other features of this rather distinctive disease help to confirm the belief that we are not dealing with an ordinary pneumonia, namely, the occasional demonstrable enlargement of the spleen, and the rare occurrence of neurological complications, in particular encephalitis. One case strongly suggestive of this latter occurred in Owen's series, and a fatal case was recently fully described in the British literature. In an unreported fatal case in Australia also scattered perivascular cuffing was found round the small cerebral vessels, though no special nervous signs were observed during life.

Needles and Gilbert describe the pathological changes in the lung in their fatal case; their findings tally with the usual experience. The lungs showed no definite areas of consolidation, and affected portions floated in water. The bronchial tree contained a creamy exudate, and the parenchymal tissue was thickened; this indicated a general and interstitial change, confirmed by microscopic examination, the septa being packed with round and plasma cells. In general the changes were those of an interstitial pneumonitis and purulent bronchitis.

There is ample evidence that this infection may be conveyed to considerable distances owing to its long incubation period, and it may spread in an appropriate environment particularly, though not necessarily, during colder weather, so as to cause an epidemic of small or considerable proportions. The actual cause is as yet obscure, though the frequent use of the name virus pneumonia shows the trend of current thought. The disease has certain anatomical affinities with influenzal pneumonia, and its lesions still more closely resemble those of psittacosis, or if the wider term is adopted, ornithosis. In a few cases there is evidence pointing to the presence of a virus with strong resemblances to the psittacosis virus. Other workers state that they have isolated the rickettsia of "Q" fever from similar cases.

We must await further light on this problem. In the meantime it should be remembered that the disease may be recognized clinically when a number of cases are studied, and its epidemic possibilities should not be disregarded. Owens, Needles and Gilbert agree with physicians all over the world that treatment is symptomatic only, and the sulphonamide drugs are quite ineffective. This is another strong argument for the proper use of these powerful drugs, which call for a correct indication and a rigorous but discreet application. The mere existence or suspicion of pneumonia is not sufficient reason for giving a sulphonamide in every case, for here we have a form of the disease in which these preparations are not of value and therefore should be withheld.

[1] *Archives of Internal Medicine*, March, 1944.
[2] *Archives of Internal Medicine*, February, 1944.

Abstracts from Medical Literature.

THERAPEUTICS.

Bile in the Treatment of Amœbiasis.

M. MONNEROT-DUMAINE (*Revue de la Science médicale française du Moyen-Orient*, July, 1943) believes that bile should be added to the list of remedies for amœbiasis. He presents the results of its use in four cases of amœbiasis of recent origin and in seven cases of amœbiasis of longer duration. He has found that bile is active against intestinal amœbiasis, and that in speed of action it is about equal to the other remedies; but it appears to be of no value when the amœbiasis is localized in the liver, since it reaches only the intestine. The percentage of failures in intestinal amœbiasis is small, whether the condition is of recent origin or long duration. In a number of cases treatment with bile provokes colic, which should be relieved by the administration of belladonna and papaverine, not opium. Patients under treatment undergo an absolute "spring-cleaning" of the colon. Amœbiasis treated with bile does not turn into the chronic form of the disease associated with cyst formation. The destructive action of the bile on the amœbæ is also noted on other parasitic protozoans in the intestine; but the author is unable as yet to give any details of its action on the various types. Indications are given for the preparation of the bile extract and for the method of administration. The author makes it clear that the work is as yet only in the early stages.

Insulin.

R. L. PAGE AND L. BAUMAN (*The Journal of the American Medical Association*, March 11, 1944) investigated cutaneous reactions produced by protamine zinc insulin and other forms of insulin. It was shown that protamine zinc insulin frequently caused skin reactions which were sometimes severe. In most cases persistence with protamine zinc insulin led to desensitization. In other cases a change to globin insulin with zinc gave complete relief from skin irritation. Reactions sometimes occurred with globin insulin, but even after receiving daily doses for five years the patients did not become sensitive to globin. Other substances tested included zinc chloride, which produced skin reactions in 40% of diabetics, and crystalline insulin, which caused reactions in some 15% only. Three kinds of globin were used, total beef globin, native beef globin and human globin. Native beef globin is used in the preparation of globin insulin with zinc.

Ascorbic Acid.

C. F. SHAFFER (*The Journal of the American Medical Association*, March 11, 1944) discusses the diuretic effect of ascorbic acid. Ten patients suffering from congestive heart failure with œdema were given 500 milligrammes of ascorbic acid per day in addition to their normal diet. It was shown that usually between the third and sixth day of this treatment slight diuresis occurred. The increased amount of urine excreted was between 250 and 1,000 cubic centimetres in seventy-two hours. This amount of diuresis was less than had been expected, and much less than the diuresis induced by mercurial diuretics — for example, "Mercopurin" in a series of fifteen patients suffering from congestive heart failure. Intravenous injection of amounts varying from 500 milligrammes to three grammes of ascorbic acid produced no appreciable diuresis. A combination of 500 milligrammes of ascorbic acid and "Mercopurin" induced more pronounced diuresis than "Mercopurin" alone.

Pulmonary Œdema.

J. M. CARLISLE (*The Journal of the American Medical Association*, December 11, 1943) describes a method of treatment of pulmonary œdema due to noxious gases in industry. Nitrous oxide, phosphorus oxychloride and pentachloride phosphorus trichloride, methyl bromide, chlorine, cadmium and dust from certain alkaloids can cause pulmonary œdema. Treatment should be commenced at once, with complete rest in bed and administration of 100% oxygen under atmospheric pressure, the expiratory valve or the efferent tube leading into the water bottle being set so as to afford one centimetre of water pressure. This pressure is raised gradually within five to ten minutes to six centimetres of water pressure. This is continued for one to three hours; trial periods are made of breathing without the mask for five to fifteen minutes, and if any respiratory distress, cyanosis or coughing occurs the oxygen administration is continued. One or two "swallows" of milk help to relieve the hacking cough that follows oxygen pressure treatment. The author lays stress on the importance of initiating treatment immediately exposure has occurred.

Sulphamerazine.

P. O. HAGERMAN *et alii* (*The Journal of the American Medical Association*, October 9, 1943) reports the results of observations on 103 patients treated with sulphamerazine. This substance has been investigated because of its greater solubility as compared to other pyrimidine derivatives, and it has been found that its acetyl derivative is approximately 20% more soluble than sulphadiazine in both water and urine. Absorption from the gastro-intestinal tract is also more rapid and complete than that of other sulphonamide derivatives; sulphamerazine is also more slowly excreted. This observation suggested that satisfactory blood levels might be attained with smaller doses of sulphamerazine and that the interval between doses might be lengthened. In the series of cases recorded the initial dose of four grammes was followed by maintenance doses of one gramme every eight hours. For four severely ill patients the respective doses were doubled. Alkalis were not administered to any patient, and the intake of fluids was forced to 3,000 cubic centimetres in twenty-four hours in an effort to obtain a urinary output of 1,000 cubic centimetres or more in twenty-four hours. Blood concentrates were measured and analyses of the urine were made each day; full blood counts were also made. The disorders treated were as follows: meningococcal meningitis (37 cases), pneumonic infections (17 cases), streptococcal infections (15 cases) and urinary tract infections (four cases); the remaining 30 cases were made up of gonococcal and staphylococcal infections. Drug fever was noted in 5·8% of cases, the condition being similar to that observed to follow the administration of other sulphonamides. A morbilliform rash was noted in two cases only. Hæmaturia was found in 8·7% of cases; the amount of blood in the urine varied from grossly visible quantities to microscopic quantities. Crystalluria was noted in seven cases, which was more than anticipated; it was, however, benign in all cases. It is probable this incidence would have been lower if more fluids had been administered or if the urine had been rendered alkaline. Therapeutic results in all cases were satisfactory and compared favourably with those reported to follow the use of sulphadiazine. As certain cases of the series were such as to offer excellent prospects of urinary complications, the results indicate that sulphamerazine produces fewer renal complications than sulphathiazole or sulphadiazine.

"Mecholyl" and Paroxysmal Tachycardia.

THE majority of attacks of supraventricular paroxysmal tachycardia do not require medical attention, the patient usually being able to apply some means of reflex vagal stimulation to arrest it. Preventive therapy consists of reassurance to the patient and investigation of psychic factors, the administration of quinidine sulphate by mouth, the use of digitalis in some instances, and the exhibition of sedatives. Attacks requiring medical attention, estimated at some 10% to 20% in all, are treated by carotid sinus reflex elicitation, sedatives and quinidine given orally. If the last-mentioned is ineffective, digitalis is used either orally or parenterally. If parenteral therapy is to be undertaken, Philip W. Morgan (*Annals of Internal Medicine*, November, 1943) recommends that "Mecholyl" is the best drug. Its use is indicated in resistant, electrocardiographically proved supraventricular tachycardia; it has no place in the treatment of other arrhythmias. Acetyl-β-methylcholine or "Mecholyl" is a stable choline and is given hypodermically, oral administration being ineffective and the intravenous route being too dangerous. Atropine or adrenaline will abolish its effects. The results of injection are dramatic, and it is essential to follow the set procedure in its administration. The patient should be recumbent, as fainting may occur; a bed pan should be ready to meet any sudden desire to defæcate during the period of the drug's action. The average dose for adults is 20 to 50 milligrammes dissolved in one cubic centimetre of sterile distilled water. Atropine sulphate, one-fiftieth of a grain, is ready in a second syringe for intravenous injection in an emergency. The arm with easily accessible veins is selected and a blood pressure cuff is applied loosely high on the arm. "Mecholyl" is administered subcutaneously below or distal to the cuff, which is not inflated. At the moment the heart rate returns to normal, as detected by the stethoscope over the precordium, the cuff is inflated

to prevent further absorption and to make ready a vein for the atropine injection, should this become necessary. In less than a minute after injection a brilliant flush comes in a wave over the blush areas, perspiration and salivation are profuse, and peristalsis becomes audible. The return to sinus rhythm has occurred as early as eighty seconds after the injection; if no effect on the rate has been noted by the time the drug's effect is at its peak, as manifested by flushing and perspiration, massage at the site of injection is suggested. If there is no effect in thirty minutes after injection a second dose can be administered. The drug does not lose its effectiveness by repeated use, and no deaths have been reported.

NEUROLOGY AND PSYCHIATRY.

Agranulocytosis following Malarial Therapy in General Paralysis.

ONLY four similar cases of agranulocytosis following malarial therapy in general paralysis have hitherto been reported in the literature, according to T. J. Heldt and G. A. Goder (*The Journal of Nervous and Mental Disease*, September, 1943), who describe the case of a Russian Jew, aged forty-five years, who developed this condition during his treatment and died. The man was inoculated intravenously with malarial blood and had his first rigor four days later. At the termination of his pyrexial treatment quinine was given, but failed to lower the temperature. His physical condition deteriorated, and he was given a blood transfusion. A blood count showed that the number of leucocytes had fallen to 750 per cubic millimetre. He finally expired in spite of further blood transfusions and other restorative measures. The complete post-mortem findings are given. The authors considered the possibility of idiosyncrasy to quinine; but as in other cases reported in the literature agranulocytosis developed before the administration of quinine, they leave the question open.

Dysmorphopsia during the Course of Sulphanilamide Therapy.

ALTHOUGH certain other ocular and neurologic complications have been reported following the use of sulphanilamide and its allies, Nathan Savitsky and Hyman Weitzen (*The Journal of Nervous and Mental Disease*, August, 1943) report what they believe to be the first case of dysmorphopsia due to sulphanilamide. The patient was a female, aged twenty-five years, with an acute endometritis and parametritis following childbirth. She was given 2·6 grammes followed by 1·0 gramme every four hours with equal amounts of sodium carbonate. Three days after admission to hospital, when she had received a total of 8·6 grammes of sulphanilamide, she complained of headache and blurring of vision. For the next two days she complained of peculiar visual disturbances: her fingers showed angular distortion; two of her fingers looked nearer than the others. Similar sensations were experienced when she looked at her toes. Objects in the ward looked thin with curvilinear distortions. At times she experienced telopsia and micropsia. The condition cleared up completely in a short time. The authors do not believe that an affection of the optic nerves or the retinal vessels alone could account for this dissociated type of dysmorphopsia.

Apperceptive Blindness in Lissauer's Dementia Paralytica.

MARY T. PATERSON AND E. STENGEL (*The Journal of Neurology and Psychiatry*, July-October, 1943) describe a case of Lissauer's *dementia paralytica* with apperceptive blindness, in which pathological examination showed the typical changes of general paralysis, more pronounced in the posterior parts of the cortex and the parastriatal areas. The phenomenon of apperceptive blindness has hitherto been observed in Pick's disease. The authors describe it as a reaction to a chaotic visual impression of the outer world as it presents itself to patients with a severe general mental disorder interacting with a visual agnosia. The patient whose case is presented in this article developed acute mental symptoms after the birth of a child at the age of twenty-seven years. Three months later *status epilepticus* developed, with atypical symptoms of a localizing nature. The patient subsequently died. From a psychological viewpoint, the authors state that apperceptive blindness is based on denial; it is a primitive way of avoiding catastrophic situations.

Intellectual Impairment after Head Injuries.

THE investigation of Jurgen Ruesch (*The American Journal of Psychiatry*, January, 1944) is concerned with the frequency and nature of intellectual impairment in head injuries. The psychological examination was given a few days after the accident or as soon as cooperation was possible. A series of psychometric tests were given, and these are fully described. A comparison of performance with the estimated intelligence was made, and the improvement on repeated examination was noted. The mental functions especially affected in head injury are speed, judgement, and ability to keep up a sustained effort. The author finds that about half the subjects suffering from head injury show slight intellectual defects, which become less severe with the passage of time. If the impairment is reversible—that is, if no gross cerebral damage has occurred—the duration of impairment is generally less than three months. The severity of the impairment is directly proportional to brain damage. The more serious the intellectual defect, the greater the incidence of abnormal neurological signs.

Psychosomatic Casualties in the Middle East.

ALFRED TORRIE (*The Lancet*, January 29, 1944) reviews 2,500 psychosomatic casualties among the allied forces from the time of the retreat to El Alamein to that of the advance to Tripolitania in 1942. He describes in some detail 1,000 cases of anxiety neurosis and hysteria; a quarter of these patients had a neurosis before the war; 58·6% were returned to full duty and 31·3% to base duty, and 5·4% were invalided. Their average length of stay in hospital was 18·1 days. The author holds that the psychosomatic illness results from a deep-seated separation anxiety following a threat to life. He discusses reconditioning treatment, and stresses the need for nurses with psychological understanding and the speedy removal of untreatable patients. While acknowledging the possibility that many of these casualties may break down again under battle stress, the author believes that many men have been salvaged for a further term of useful work. A small experiment was carried out on the adjuvant use of vitamin B_1 and testosterone with a diet rich in carbohydrate. Patients treated in this way responded more quickly to psychotherapy than did others not so treated.

Biochemical Component of the Manic-Depressive Psychosis.

PERRY J. BAIRD, JUNIOR (*The Journal of Nervous and Mental Disease*, April, 1944), set out to discover whether there was evidence of increased amounts of adreno-cortical hormone in the blood of acutely manic patients. His experiments were performed on adrenalectomized rats and cats. Citrated whole blood from manic patients was injected each day into the peritoneal cavities of adrenalectomized cats, whose behaviour was then noted. The average life of an adrenalectomized cat is 5·5 days. Cats injected with blood from manic patients lived on an average 2·7 times as long as control cats injected with normal blood. Adrenalectomized rats which received injections of blood from manic patients lived eight times as long as similarly treated rats receiving normal blood. Adrenalectomized cats are weak and wobbly on their legs; they refuse food. When treated with blood from manic patients they become strong and vigorous and have at times shown voracious appetites. They will also exhibit the rage reaction, which cannot be elicited in the controls. The author draws attention to the observation that autopsy studies of manic patients have shown cortical hyperplasia of the adrenal glands.

Some Observations on the Cerebro-Spinal Fluid in "Closed" Head Injuries.

J. H. PATERSON (*The Journal of Neurology and Psychiatry*, July-October, 1943) reports the lumbar puncture findings in 300 cases of head injury. The withdrawal of cerebro-spinal fluid was carried out shortly after the injury; "open" injuries with dural penetration was excluded. Though the pressure of the fluid was normal in about two-thirds of the cases, it tended to be higher in the more severe cases. In the average untreated case the pressure returned to normal in the space of a week. If there was blood in the fluid, it appeared to clear away rapidly by natural means, and in most cases it had disappeared within one week of the injury. In cases of mild injury the cerebro-spinal fluid was uncontaminated with blood at the initial lumbar puncture; when the injury was severe (post-traumatic amnesia of over twenty-four hours), in only about 8% of cases was the fluid clear. It was shown that there was a fairly close relationship between fluid pressure, erythrocyte count and the severity of the mental state at the initial lumbar puncture.

British Medical Association News.

SCIENTIFIC.

A MEETING of the Section of Neurology, Psychiatry and Neurosurgery of the New South Wales Branch of the British Medical Association was held on March 3, 1944, at the Mental Hospital, Parramatta. The meeting took the form of a series of clinical demonstrations.

Criminal Patients.

Several patients were shown who had committed crimes and who were suffering from mental disorders.

Schizophrenia.

The first criminal patient was a male salesman, aged twenty-five years, whose father was Italian and whose mother was English. The patient had been admitted to the hospital on May 3, 1939, having been charged with causing grievous bodily harm to his mother, who died two days later. He was remanded for medical observation, but not committed for trial. The circumstances surrounding the crime were as follows. In the early evening of April 26, 1939, the patient's mother was attacked by a man in her home. Her tongue and portion of her throat were pulled out, and from these injuries she died on May 5. The patient, who lived with her, was seen to run out of the house, quite naked, and with his hands covered with blood. Some hours later he walked, still naked, into a church hall two miles away; he was taken to the Reception House.

On his admission to hospital, eight days after the crime, he was violent and resistive and acutely suicidal. He was difficult to feed and mentally inaccessible. For two months he remained in much the same condition, except that he ate better. Then, one day, he held out his hand to the medical officer and said: "Put it there." He did not speak again for a week; then he suddenly "burst into song", and sang some Italian opera music; he was said to have sung very well. By September, 1939, he was able to make a few remarks, but when questioned he retreated into his "negative" phase. He was then able to be out of the restraining camisole by day, but still required it at night. In April, 1940, he had made little further improvement, except that he ate well. He was stuporose, but not resistive or negativistic. In April, 1941, he was well physically, interested in his surroundings, friendly, and able to answer questions, but not questions relating to the crime, about which he claimed to know nothing at all. He said that his mother was alive and well. In December, 1941, he was clean, tidy, friendly and anxious to work. He was unable to recall anything about his mother's death, and would not accept the statement that she had been injured or had died. He could, however, discuss clearly and in detail his trial and that of his father for conspiracy in selling worthless bonds. The father had been convicted, but the son had been released as being under the age of twenty-one years and under his father's influence. This trial took place two or three days before the crime.

In January, 1942, he became excited and hypomanic. He was expansive and elated, and his conversation and letters had a pronounced religious trend. He had no delusions or hallucinations then, nor were any discovered at any time. This phase lasted for a year, during which he slowly settled down, so that by January, 1943, he was quiet, friendly, and anxious to discuss his case and obtain his release. He answered brightly and intelligently any questions except those regarding his mother's death. He now accepted the fact of her death, but insisted that he had no part in it. Instead, he said that he had left the house early that evening, fully dressed, and had been struck on the head and robbed of his clothes by some men in a vacant allotment near by. He explained his mother's injuries by saying that the house was robbed of valuable papers of his father's on that night, and that no doubt the robbers had injured his mother.

In October, 1943, he said that his memory was clear; that he had, in fact, injured his mother; that it was done in self-defence, as she was always "nagging" him, and had attacked him at 7 p.m. while he was in bed. In the fight he had caught hold of her tongue with his hand. He said that he could be charged only with causing grievous bodily harm. He explained his naked state by saying that he slept "in the raw".

In February, 1944, he was bright and alert, self-assertive as a rule, but cautious when questioned; he worked well and seemed happy. He wanted to go to trial, and thought that as five years had elapsed he should be freed. He admitted his guilt of having caused grievous bodily harm, but not of having committed murder. His statements about that evening were unsatisfactory. For instance, he said that he and his mother were drugged by something in the food. Recently he said that he did not know who had attacked him in bed; it might have been his mother or the robbers, and they might later have attacked her.

It was pointed out that the questions at issue were as follows: Were the statements about drugging and assault delusions, or were they excuses to mitigate his crime—in other words, were they delusions or lies? Upon the answer depended the decision as to whether the patient was mentally fit to stand his trial.

A second male patient was shown, aged forty-three years and unmarried; the patient had been a labourer, aged twenty-three years, at the time of his crime. He had been admitted to the criminal division of the hospital on April 16, 1924, on the following charges: (i) murder; (ii) three counts of feloniously wounding with intent to murder; (iii) a count of maliciously shooting with intent to prevent lawful apprehension. The patient's schizophrenic condition was considered to be hereditary; he was the illegitimate son of a male patient who had been admitted to another mental hospital in 1905 and was still an inmate in 1924. In 1931 the patient's mother was admitted to yet another mental hospital. The patient's crime was as follows. About 1 p.m. on February 11, 1924, four men and their wives and children were having a picnic when they were fired on by someone across the river who was using a ·303 rifle. He continued to fire while they tried to escape, and in all seventeen shots were fired, of which seven found a mark. One man died the next day; one recovered after a long illness; a third received four wounds, which were not serious; the fourth sustained a fractured patella. The man escaped into the hills, and was not captured for five days. He was charged and committed for trial. Apparently he was well behaved; although he had been regarded as "weak-minded" for years and was said to be unable to read or write, he was not considered insane at his appearance in court. One month later he was sent to the State Penitentiary for observation, having become violent during the previous fortnight. At the penitentiary he was stuporose; he gazed fixedly before him with wide open eyes, taking no heed of questions. He did not speak and was fed with difficulty.

After his admission to the mental hospital, the patient remained in his former condition for about three months. He gradually became more cooperative, although he only mumbled in reply to questions. In September, 1924, after a course of thyreoid treatment, he improved mentally and physically, lost his stupor and was able to converse. He denied that he had committed any crime and insisted that he knew nothing of the crime with which he was charged. He was quiet and well behaved in 1925, but he gradually developed grandiose ideas, saying that he was the cleverest man in the world, and making various other extravagant claims. His blood serum failed to react to the Wassermann test. In 1926 and 1927 he was in general quiet, but had periods of excitement and was occasionally surly and aggressive. He had occasional sham convulsive seizures in 1925 and early in 1926, but desisted from such behaviour after the latter part of 1926. In 1928 he was said to be growing demented, and was careless and untidy in his dress. He worked hard, but his delusions were more expansive. He continued to be euphoric and grandiose; he apparently had no hallucinations, but his ideas became more and more expansive. During the ten years prior to the meeting his condition had been stationary. He was a wonderful and tireless worker, cheerful and friendly, but argumentative when his claims were disputed. The world was not too big for him. At the time of the meeting he believed that he was the owner of the universe and of God. He continued to deny any knowledge of a murder in 1924.

Paraphrenia.

Another criminal patient was a man, aged seventy-two years, unmarried, and an orchardist by trade. He had been admitted to the criminal division of the hospital on April 11, 1940, at the age of sixty-eight years, on a charge of murdering a neighbour. For about twelve months prior to the commission of the crime he was thought by his neighbours to be eccentric. He used to pace up and down outside his house as if guarding it, and on several occasions he told the man whom he ultimately murdered that the man's fowls were talking about him. On March 16, 1940, some of this man's fowls had entered the patient's yard and were with his fowls; his housekeeper tried to separate them, but when she could not do so, the owner went to her assistance. The patient became very angry; he said that

they were stealing his birds, and fired a rifle at his neighbour; the second shot entered his heart. When the police arrived, the patient was looking out of a window, still holding the gun; but he did not resist arrest. In court he would not admit his guilt, although he knew his housekeeper had witnessed the shooting; he said: "You've got your case, now prove it." The coroner found that the patient had feloniously and maliciously murdered his neighbour, but did not commit him for trial, as he was then on remand for medical observation.

When the patient was certified insane, he was suspicious and delusional about voices which had threatened his life for the last twelve months. He often searched his property to find the people who owned the voice and who in his opinion were putting electricity into his body and making his mouth sore by putting words into it. His intelligence quotient was 88.

It was stated that since the patient's admission to hospital he had been a model patient, quiet and well behaved, solitary but not unfriendly. He was delusional and had hallucinations about voices persecuting him, and about wireless waves on his body which made his head hot. He was also suspicious in a paranoid fashion. He did not readily voice his delusions, and they did not appear to influence his conduct. He was fairly stable emotionally, agreeable and amenable. At the time of the meeting he showed no dementia. In spite of his delusions, his only outburst or antisocial act was the crime he committed when he thought that his property was being stolen. He would not say whether he suspected that the neighbour whom he shot was responsible for his alleged persecution.

Paranoia.

An unmarried male patient, aged fifty years, had previously been a poultry farmer. He had been admitted to the criminal division of the hospital on November 19, 1940, at the age of forty-six years, charged with murder. He was remanded twice, but not brought to trial. His condition was diagnosed as paranoia. In 1940 he worked as a market gardener on a block of ground on which he had a shack. He used to have meals at a neighbour's house, but did his own housework, washing *et cetera*. He said that he got on well with all his neighbours and earned enough to keep himself, but not enough to marry. He said that for some months a man had been spreading lies that he (the patient) was a sex pervert; he said that this man was a member of the underworld, who had been hounded out of another State, and that other members of the underworld lived close by. Because of these lies, the patient said, he was unable to obtain employment, and even children used to avoid him. He did not know this man and had never spoken to him; but he used to see him riding by on a bicycle, and the man used to look and nod at him. At 2 p.m. on October 25, 1940, the man was shot dead. The rifle used was found in some bushes near the scene of the crime, and was identified as one previously borrowed by the patient; finger prints were found on it. On November 1, 1940, the patient was arrested and charged. He was remanded twice, but before the expiration of the second remand period he was certified insane and admitted to the hospital; he did not again appear in court. Soon after his admission to hospital he was able to give an account of the details of the crime, but there were numerous inconsistencies. The patient continued to explain his innocence with a wealth of irrelevant detail.

At the time of the meeting he was quiet, reserved and well behaved. He was suspicious and evasive when questioned. He continued to maintain that he was "framed" by the police, and had recently said that people who knew him had written to the medical superintendent, asking the superintendent to hold the patient in hospital. He affirmed that one friend had said that he (the patient) had told him that the police had asked him (the patient) to shoot his victim, as he was a dangerous criminal.

Congenital Mental Deficiency without Epilepsy.

An unmarried male patient, aged thirty-three years, a labourer, was aged twenty-four years at the time of his crime. He had been admitted to the criminal division of the hospital on February 21, 1935, charged with shooting with intent to murder. The patient's intelligence quotient was 35; he was a low-grade imbecile. According to his own story, he was illegitimate. He attended a country school from the age of six years to the age of fourteen years, and reached the second class in the infant division. He could not learn and could not read or write; he could just manage to count to twenty, but not backwards, and was unable to do the simplest additions. He had no idea of the capital cities of Australia. He said that he had been reared by his grandparents, who had died. Since he left school, he had worked for short periods on various farms in the district. His story of an altercation that had arisen between himself and the man whom he shot dead, for whom he was working at the time, was garbled; he said that the man had threatened him with a pitchfork, and that he (the patient) had fired three shots with a pea rifle standing near, the third bullet hitting the man on the nose. The patient maintained that he had not meant to do it; he was frightened, and ran into the bush; there he remained for nearly a week with nothing to eat. When he called at a friend's place, the police were informed and he was arrested. During the recital of this history, the patient was emotional and lachrymose, and often repeated that he had not meant to do it.

On his admission to the hospital, he admitted his crime; he said that he was afraid the farmer would kill him with the pitchfork. He was unable to discuss the matter without crying. He was dull and mentally retarded, and ideation was poor. He did not know his age and could not spell his name; he was easily upset, and shouted and screamed like a child. He frequently complained of abdominal pain and of interference with his viscera by wireless. He often accused the staff of assaulting him; but whenever he had injuries and was closely questioned, he eventually admitted that he had caused them himself. In 1938, whilst at another mental hospital, he had vomited coffee-ground material and had melena; he was treated for two years with a special diet, and with bismuth and belladonna, but as he still complained he was sent to Parramatta for radiological examination. No abnormality was found. He still complained of abdominal pain, though he had had no melena or vomiting of blood since 1938. Usually his complaint was of vague pains all over his body. He bumped his head and bruised his arms and legs at times to obtain sympathy and to support his claim that he was assaulted and ill treated. At times he scratched his mouth with pins or wire and expectorated a little blood. He appeared to be hallucinated at night, when he was often noisy, complaining that people entered his cell and injured him. By day his account of the night's events was so confused and discursive that no satisfactory description of his hallucinations could be elicited. At the time of the meeting he denied his crime, saying that "the man did it himself and they put me away", or "the man shot himself on purpose to get me into trouble".

Neurological Disorders.

Three patients suffering from various neurological conditions were shown.

Huntington's Chorea.

The first patient suffering from Huntington's chorea was a female, aged sixty-two years, who had been admitted to another mental hospital in 1931 at the age of fifty years. The chorea developed at the age of fifty-two years. Four of the patient's sisters died of Huntington's chorea at the ages of thirty-five, thirty-six, forty-six and fifty-four years respectively; only one of the sisters was married, and she had no children. The patient's father died at the age of forty-eight years as the result of an accident, but he was suffering from chorea. The father's brother died from chorea, and two of his sons died of the same complaint at the age of about fifty years. The patient's mother's family was free from chorea; the mother died at the age of eighty-five years. The patient's two brothers died at the ages of fifty-six and fifty-eight years respectively, but not from chorea. The eldest sister of the six girls was still free from the disease at the age of seventy years; she had three children, the eldest, a son, at the age of thirty-six years being free from the disease, and twin girls, aged twenty-nine years, being unaffected.

The patient had eight children, the eldest aged thirty-three years. They showed no chorea, but one of them was deaf and dumb. It was pointed out that the interesting features were that the patient's father and brother, and the father's brother's two sons, had all died of the disease; yet of the patient's siblings, the males escaped and five sisters were affected. The patient and her healthy siblings had about twenty descendants; but none were old enough to exhibit the disease.

The second patient suffering from Huntington's chorea was a male, aged sixty-eight years, a bush worker, who had been admitted to hospital on February 2, 1944, with a history of being "fidgety" and of having twitchings, mainly in the shoulders, for two or three years. The patient was the youngest of his father's second family. There were eight children in this family and several children in the first family. The father was said to have been tremulous before

he died; but confirmation was impossible, as he had died sixty-five years earlier, at the age of sixty-five years. Two of the patient's step-brothers were "eccentric" and one suffered from chorea; the second brother had an insane son; and the third step-brother died in a mental hospital. Of the patient's siblings, one suffered from chorea and died in a mental hospital at the age of thirty-five years. One sister, aged seventy-two years, suffered from chorea, but was still alive. The eldest brother, aged seventy-four years, did not suffer from chorea; he had seven children, the eldest aged fifty years, who were free from chorea.

The patient had eight children, of whom one had died at the age of three weeks. Only two of the seven still living had learned to read or write. The eldest, a male, aged thirty-five years, was in the Australian Imperial Force, but was a high-grade mental defective. The third child, a girl, aged thirty-one years, was said to be "not normal". The sixth child, a girl, aged twenty-two years, was a mental defective and was bigamously married to a known criminal; she had served two gaol sentences. The youngest child, a girl, aged seventeen years, was said to have the mentality of a child of ten.

The patient was never bright mentally, and he had drunk heavily until eight years prior to the meeting, when he was unable to work and could not afford to buy drink. He became tremulous about three years prior to the meeting, and later choreic movements developed, which had been worse in the last few months. He had been much concerned about the arrest and sentencing of his daughter for bigamy and consorting with criminals; this occurrence apparently precipitated his certification as insane. At the Reception House he was agitated, picked his skin violently, shouted and was difficult to control. Since his admission to hospital he had been quiet, but confused and disorientated, and his memory was grossly impaired. He believed that his relatives were trying to poison him, but at the time of the meeting he was unable to give any account of himself.

Alcoholic Polyneuritis.

Another patient, a female, aged fifty years, had been admitted to the hospital on February 8, 1944; she had been found wandering in the street and could give no account of herself. The patient was divorced. When admitted to hospital she was confused, disorientated, restless and unable to stand without assistance. The calf muscles were hyperæsthetic to pressure; the skin was hyperæsthetic in patches and anæsthetic in others; cramp was occasionally felt in the calf muscles. The knee jerks were diminished and the ankle jerks absent. Later a history of alcoholism was elicited. At the time of the meeting the neuritis was clearing up slowly under treatment with thiamin and the patient's mental condition had improved.[1]

Endocrine Disorders.

Several patients were shown who were suffering from endocrine disorders.

Virilism.

A female patient, aged thirty-one years, unmarried, had excessive hair growth on the face and body. The patient had been born when her mother was aged forty-two years. Her father's sister had always had amenorrhœa, and one sister menstruated rarely before marriage. The patient was fairly well educated. Photographs taken at the ages of sixteen and nineteen years showed that she was then normal in build. The menarche had occurred at the age of thirteen years; menstruation was regular for years, but had become rare and the flow was scanty; it now occurred only once or twice a year. The patient was certified as insane on account of delusions of persecution by wireless and screaming attacks. Hair had begun to grow on her face in 1939, and menstruation had been scanty since 1940. Obesity had been present since 1940, but it was not increasing. At the time of the meeting considerable hair growth was present on the body and face. X-ray examination revealed that the pituitary fossa was deeper than normal, and that some approximation of the anterior and posterior clinoid processes was present. No calcification was noted in the adrenal glands. Vaginal examination revealed considerable enlargement of the *labia minora*, but no other abnormality. Mentally the patient was dull, lethargic and indolent. Her systolic blood pressure was 150 millimetres of mercury and the diastolic pressure was 90. The basal metabolic rate was 10%, and her weight was eleven stone three pounds. Investigation of the sugar tolerance revealed only a slight lag. The blood urea concentration was 22 milligrammes *per centum*.

[1] Fourteen days after the meeting the patient left hospital; she has remained well.

It was pointed out that the syndrome described by Cushing and assigned by him to basophile adenoma of the pituitary gland was characterized by amenorrhœa, adiposity and hirsuties, together with raised blood pressure, erythrocythæmia and bluish *striæ atrophicæ*. Broster, Gardiner-Hill and Greenfield had, however, in 1932 shown that the triad of amenorrhœa, adiposity and hirsuties might be associated with adrenal hyperplasia; in that case the excretion of androgens in the urine was raised above the average of 4·0 to 14·6 milligrammes per day and the adrenal cortex was fuchsinophile. In the present case there was no radiological evidence of pituitary changes, the blood pressure was not raised, there was only a slight lag in the tolerance to sugar and no erythrocythæmia was present. On the other hand, the estimation of the amount of androgens in the urine had been unsatisfactory through the patient's failure to cooperate in the collection of specimens of urine. It was thought that laparotomy would be justified for the making of a diagnosis and for the removal of an enlarged adrenal gland if such a gland was found. Whether the disappearance of masculine features would be associated with a return to mental normality was a matter for speculation.

Mongolism.

A male patient, aged thirty-two years, unmarried and having no occupation, had been admitted to the hospital at the age of twenty-seven years. The following mongol features were present: fissured tongue, slanting eyes, hypertelorism, deformed ears, deformed teeth, inflamed eyelids, microcephaly, straightness of the back of the head, short thick fingers, defective palm lines, fissured soles and generally small stature. Mentally he was grossly defective; he could not write, read or spell and could not count beyond five. When shown any coin or coins, he always said, "four bob". At the time of the meeting he was aged thirty-two years; but he gave varying figures for his age up to 100 years. His speech was difficult to understand, though he appeared to have no defect of his vocal mechanism. No personal or family history was available, except that he was cared for at home until the death of his mother, when he was aged twenty-seven years.

Cretinism.

An unmarried male patient, aged thirty-seven years, a waiter, had been admitted to the hospital at the age of thirty-three years. He had needed thyreoid extract since the age of eighteen months. Photographs showed the improvement under treatment during the first five years of life. While he lived with his parents and took his tablets he remained well. He was at school from the age of six years to that of sixteen years; then he worked as a messenger, and later he worked with his father as a painter and renovator until the age of twenty-two years. For the ten years prior to his admission to hospital he was a houseman, waiter and "useful". His intelligence quotient was not estimated. His father died as the result of an accident; nothing was known of him. At the time of the meeting the mother was alive and well at the age of sixty-eight years; she was alert and intelligent. The patient had two brothers, one in another mental hospital.

On his admission to hospital in 1940 he was depressed, solitary and hallucinated. He had been found by the police in the grounds of Sydney Hospital, afraid to venture out lest he should be shot. He remained dull, inert and apathetic for three months, until thyreoid treatment was tried. The improvement was miraculous. The patient then volunteered the information that he had taken thyreoid extract all his life.

Delayed Sexual Development.

A female patient, aged twenty-two years, unmarried, had been admitted to the hospital on June 19, 1940, suffering from congenital mental deficiency without epilepsy. At home she was uncontrollable and aggressive towards the younger step-children. She had no abnormal sexual tendencies. In hospital she was always quiet and well-behaved, but dull and retarded. Twice when allowed out on leave she became aggressive and troublesome at home. Her secondary sexual characteristics were under-developed. At the time of the meeting she was aged twenty-two years and had menstruated for the first time at the age of twenty-one years; the next menstrual period occurred three months later and the third occurred six months later. Whilst on leave she was treated with "Antuitrin S", and it was reported that this treatment aggravated her mental condition.

A female patient, aged seventeen years, unmarried, was admitted to hospital on February 17, 1944. She was a State ward suffering from congenital mental deficiency with

epilepsy. Her intelligence quotient was 73. She had attacked her mother and younger brothers. The patient had been subject to epilepsy since the age of eleven years; the seizures were never severe. Physically her secondary sex characteristics were poorly developed; the breasts were small and the pubic hair was scanty. She had never menstruated. She was treated for amenorrhœa with thyreoid tablets, but this treatment made the seizures more severe and more frequent. At the time of the meeting she was being treated with stilbœstrol, 1·5 milligrammes per day being given with calcium phosphate. No result had as yet been noted.[1]

Correspondence.

BUTTER RATIONING AND THE BRITISH MEDICAL ASSOCIATION.

SIR: If correctly reported in last Friday's *Sydney Morning Herald*, the Federal Council's public statement on butter rationing is to my mind a most disturbing document.

That the medical profession should make public pronouncements on matters affecting the public health, I welcome. That the Federal Council should speak for the profession in such matters, I accept. But I believe that the wording of the statement in question will seriously damage the reputation of the profession as a disinterested body competent to give advice on these or other matters.

Our claim to speak with authority in matters of health rests on our adherence to plain statements either of scientific fact or, where facts are not available, of general opinion in fields where that opinion has claim to expertness. In the Federal Council's statement occurs the sentence: "The latest failure in administration is in relation to the approaching reduction in the butter ration." This sentence expresses or implies two opinions: (i) that the reduction in butter ration is the result of a failure in administration, and (ii) that there have been previous failures in administration by the same Government.

The first of these, it would appear, expresses an opinion where the full facts are not available and in a field where the profession has no more claim to expertness than any other body of citizens. The second not only falls into the same error, but also conveys an undercurrent of meaning which has thrown the Federal Council into the heat of political controversy, where cool detachment of judgement is not only hard to maintain, but unlikely to be heard.

Both expressions of opinion are quite unnecessary to the argument regarding the inadequacy of the butter ration, and they are bound to have the effect of confirming the unfortunate attitude of those members of the general public and of the Government who are already unduly suspicious of and even hostile to the British Medical Association.

Those of us who, in private conversation, are cast in the role of defenders of the British Medical Association are finding that the sentence quoted is defeating the purpose of the Federal Council by distracting attention from the main purport of its statement. But more important than this, it is undermining the authority of the whole medical profession in future discussions of the public health and of medical services.

I sincerely hope that in future pronouncements the Federal Council will be more careful of its phraseology.

Yours, etc.,

T. DUDLEY HAGGER.

Bingara,
New South Wales,
June 6, 1944.

Obituary.

ARTHUR HOPKINS CLARKE.

WE are indebted to Dr. W. E. L. H. Crowther for the following appreciation of the late Dr. Arthur Hopkins Clarke.

The news that Dr. Arthur Hopkins Clarke had died in his sleep during the night of April 24, 1944, was not unexpected. Some months before he had had a cerebral hæmorrhage from which recovery was only partial, and from that time he had not left his home.

[1] Menstruation occurred eight weeks later.

Arthur Hopkins Clarke came of outstanding pioneer stock. He was the grandson of the Reverend George Clarke, who in 1822, with his wife, passed through Hobart Town by the ship *Heroine* on the way to New Zealand. Their son George, the father of Arthur Hopkins Clarke, was born in 1823 at Parramatta, and as an infant went to the mission at the Bay of Islands with his parents. The child was sent to Hobart Town for part of his education, and soon after his return to New Zealand took a prominent part in Heke's war, between the Maoris and the white settlers. He served as an interpreter and expert in native affairs on the staff of Sir George Gray. By reason of his long and intimate contact with the Maoris, he was esteemed and trusted by them and so helped greatly in gaining the adhesion of some of the irreconcilable chiefs to the Treaty of Waitangi, which brought the war to a close. Some years later George Clarke became ill, and, deciding to study for the church, brought the New Zealand chapter of his life to its finish. Returning to Hobart Town, he married the daughter of Henry Hopkins, who had been a fellow passenger with his father on the *Heroine*. His father-in-law was the first to export our wool systematically to England and became a very influential merchant and shipowner. A deeply religious man, he was responsible for building the first Congregational Church and Sunday school in the colony.

George Clarke entered the ministry of this church and for fifty-two years served it faithfully in Hobart Town. He was, as well, deeply interested in education, and as its greatly revered Chancellor, presided over the formative years of the University of Tasmania. The foregoing will serve to indicate the character of Arthur Hopkins Clarke's immediate forebears, and he was equally happy in the environment into which he was born seventy-three years ago. The old mansion "Summerhome" still stands unaltered and unchanged among its trees and here the children of his sister still live.

As a small boy he was taken with the whole family by sailing ship for a long visit to England, and the return voyage was made in the famous *Sobraon*. After his years at the Hutchins School, he was entered as a student at the Hobart General Hospital for some preliminary instruction before his return to London. Saint Bartholomew's was the hospital of his choice, and he was one of a small group of Tasmanians who boarded near by. He, with Dr. W. W. Giblin and Charles Walch, was among the last to go to Great Britain for their primary qualifications rather than obtain them from an Australian university. Dr. Wilfred Giblin, his lifelong friend, has told me of vacations spent with Clarke on walking tours—the first in the south of England, another in Norway, and a third in Germany and the Rhine Valley. How pleasant the world must have been then and what a delightful finish to each year's work. Having taken "the conjoint", he returned to Tasmania in 1894, and here in Hobart he practised for some years in partnership with Dr. Giblin. After his marriage he moved to Albert Terrace, where as well as engaging in private practice he acted as government medical officer, a post that then entailed the care of institutions for the infirm and poor. From this it was only a step to the position of acting health officer for the State. This position he held with marked distinction for a number of years, during which

occurred the alarm of suspected smallpox at Launceston (for this short period I served as his representative at the isolation hospital there) and the pandemic of influenza in 1919. His appointment was, however, not made permanent, as he did not have the necessary qualification of a D.P.H.

For many years he was, too, an honorary medical officer to the General Hospital. I shall mention later his work for the Royal Society, and he was one of the founders of the medical section of that body. To the British Medical Association he gave of his best. An original member of the Tasmanian Branch, he served more than one term as its president and did much to help it through its early years.

He was concerned, too, with other aspects of science. In 1897, with R. Harper, he presented a paper to the Royal Society of Tasmania, "On the Measurements of the Tasmanian Crania in the Tasmanian Museum", and two years later another on "The Measurements and Description of some Mallicolo Crania". With his friend R. M. Johnston, a noted geologist, he cruised in his motor-boat freely around our coasts, and knew much about our fish and their habits. Best of all I think he liked flowers and horticulture. These interests in association with his long service as senior vice-president of our Royal Society prompted the then Governor, Sir James O'Grady, to offer him the private secretary's cottage, in the gardens of Government House, as a residence, and it was here that he spent the last tranquil years of his life.

My personal memories of Dr. Clarke date from my childhood, and for several years I acted as assistant health officer under his direction. He had inherited from his father strength of character with a great gentleness and regard for the feelings of those with whom he worked. It was his custom to listen quietly and to offer understanding and practical help when some vexed question arose. When differences were acute, as they often were in our medical world, those who put their viewpoint to him were assured that their confidence would be respected and that his transparent goodness and honesty of purpose would help them to a solution. He was a tall spare man and the owner of one of the very first automobiles in Hobart, and it is pleasant to remember him steering his little roadster through the streets with his two black cocker spaniels beside him. For the last ten years we had hardly seen him at all. From time to time, however, he sent gifts of books to the Royal Society, so we knew that he was with us in spirit at least. Thus when the separation came, the loss was softened, and we are left only the happiest memories of our friend and colleague.

HENRY ARTHUR POWELL.

WE regret to announce the death of Dr. Henry Arthur Powell, which occurred on June 7, 1944, at North Adelaide.

ANTON BREINL.

WE regret to announce the death of Dr. Anton Breinl, which occurred on June 28, 1944, at Sydney.

FRANCIS SEAVINGTON STUCKEY.

WE regret to announce the death of Dr. Francis Seavington Stuckey, which occurred on June 30, 1944, at Portland, New South Wales.

Nominations and Elections.

THE undermentioned has applied for election as a member of the New South Wales Branch of the British Medical Association:

Hughes, Kenneth Tamworth, M.B., B.S., 1933 (Univ. Sydney), M.R.C.P., 1937, 2/6 Australian General Hospital, A.I.F., Australia.

The undermentioned has applied for election as a member of the South Australian Branch of the British Medical Association:

Murray, William Elliot, M.B., B.S., 1943 (Univ. Adelaide), Royal Adelaide Hospital.

Diary for the Month.

JULY 11.—New South Wales Branch, B.M.A.: Executive and Finance Committee.
JULY 11.—New South Wales Branch, B.M.A.: Organization and Science Committee.
JULY 11.—Tasmanian Branch, B.M.A.: Branch Meeting.
JULY 14.—Queensland Branch, B.M.A.: Council Meeting.
JULY 14.—Victorian Branch, B.M.A.: Ethics Subcommittee.
JULY 17.—Victorian Branch, B.M.A.: Hospital Subcommittee.
JULY 17.—Victorian Branch, B.M.A.: Finance Subcommittee.
JULY 18.—New South Wales Branch, B.M.A.: Medical Politics Committee.
JULY 18.—Victorian Branch, B.M.A.: Organization Subcommittee.
JULY 19.—Western Australian Branch, B.M.A.: Branch Meeting.
JULY 20.—Victorian Branch, B.M.A.: Executive Meeting.
JULY 20.—New South Wales Branch, B.M.A.: Clinical Meeting.
JULY 25.—New South Wales Branch, B.M.A.: Ethics Committee.
JULY 26.—Victorian Branch, B.M.A.: Council Meeting.
JULY 27.—New South Wales Branch, B.M.A.: Branch Meeting.
JULY 28.—Queensland Branch, B.M.A.: Council Meeting.
AUG. 1.—New South Wales Branch, B.M.A.: Organization and Science Committee.
AUG. 2.—Western Australian Branch, B.M.A.: Council Meeting.
AUG. 2.—Victorian Branch, B.M.A.: Branch Meeting.

Medical Appointments: Important Notice.

MEDICAL PRACTITIONERS are requested not to apply for any appointment mentioned below without having first communicated with the Honorary Secretary of the Branch concerned, or with the Medical Secretary of the British Medical Association, Tavistock Square, London, W.C.1.

New South Wales Branch (Honorary Secretary, 135, Macquarie Street, Sydney): Australian Natives' Association; Ashfield and District United Friendly Societies' Dispensary; Balmain United Friendly Societies' Dispensary; Leichhardt and Petersham United Friendly Societies' Dispensary; Manchester Unity Medical and Dispensing Institute, Oxford Street, Sydney; North Sydney Friendly Societies' Dispensary Limited; People's Prudential Assurance Company Limited; Phœnix Mutual Provident Society.

Victorian Branch (Honorary Secretary, Medical Society Hall, East Melbourne): Associated Medical Services Limited; all Institutes or Medical Dispensaries; Australian Prudential Association, Proprietary, Limited; Federated Mutual Medical Benefit Society; Mutual National Provident Club; National Provident Association; Hospital or other appointments outside Victoria.

Queensland Branch (Honorary Secretary, B.M.A. House, 225, Wickham Terrace, Brisbane, B.17): Brisbane Associated Friendly Societies' Medical Institute; Bundaberg Medical Institute. Members accepting LODGE appointments and those desiring to accept appointments to any COUNTRY HOSPITAL or position outside Australia are advised, in their own interests, to submit a copy of their Agreement to the Council before signing.

South Australian Branch (Honorary Secretary, 178, North Terrace, Adelaide): All Lodge appointments in South Australia; all Contract Practice appointments in South Australia.

Western Australian Branch (Honorary Secretary, 205, Saint George's Terrace, Perth): Wiluna Hospital; all Contract Practice appointments in Western Australia.

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